Three Essays on Corporate Governance and Narrative Disclosure

by

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A mi familia que siempre creyó en mí y sin los que no sería la persona que soy hoy en día. A mi abuela, que me apoya y lo ve todo desde allá arriba. A mi pareja que me ha apoyado estoicamente durante todos estos años. Por supuesto, a mis tutoras Beatriz y Encarna que me han ayudado y aconsejado durante todo este proceso y a las que tantísimo les deberé el resto de mi vida. A mi mejor amigo y coautor Antonio sin el que todo este proceso no sería lo mismo, por todos esos días dándome consejos y escuchando mis preocupaciones. A todos mis compañeros de doctorado, algunos ya amigos para siempre. A todos, mi más sincero gracias.

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Contents

Summary

This Thesis contains three studies related to corporate governance and narrative disclosure. In Chapter 1, we study whether new CEOs engage in qualitative strategies to extend their tenure. In Chapter 2, we analyze a friction in the managerial labor market. In particular, we study the relationship between a decrease in the pool of replacement CEOs, the incumbent CEO level of entrenchment, firms' financial reporting quality and narrative disclosure. Finally, in Chapter 3, we study the effect of hostile takeover susceptibility on narrative disclosure.

The concept of *Corporate Governance* can be defined as the set of rules applied to control and lead a company. Corporate boards have been extensively studied in the literature. Every company has a board of directors and many studies want to discern whether differences across boards can explain firms' behaviour and performance (Hermalin and Weisbach, 2010). The main goals of corporate boards are to advise and monitor management. One of the duties of the board is to appoint the new CEO and decide about dismissing the incumbent one in case, for instance, of poor performance.

On the other hand, managers can decide about the narratives they use in their 10-K reports. Narrative disclosure is an efficient way to disclose relevant firms' information (Merkley, 2014). There is an increasing stream of literature showing that not only quantitative but also qualitative information is relevant for investors and has relevant economic effects (Frazier et al., 1984; Gibbins et al., 1990; Tetlock, 2007; Tetlock et al., 2008; Feldman *et al*., 2010; Huang et al., 2014b).

When a new CEO is appointed, the board applies its monitoring role to assess his or her ability using all the available information (both quantitative and qualitative). This ability assessment is an important component of corporate governance (Hermalin and Weisbach, 2017).

Prior literature confirms that managers worry about how firm performance influences the labor market assessment of their managerial skills and, also, that they are willing to take real and reporting decisions to improve this perception and construct good reputations (e.g., Nagar, 1999; Ali and Zhang, 2015). Linking with this idea, in Chapter 1, ***Optimistic Disclosure Tone and CEO Career Concerns***, we argue that CEOs use narrative disclosure tone to assuage career concerns. In particular, we predict that more talented CEOs use a more optimistic tone at the beginning of their tenures to build a reputation of strong performance ability. Ali and Zhang (2015) show that newly appointed CEOs are likely to engage in earnings management activities (i.e., quantitative strategies) given their career concerns. Our argument is that new CEOs are likely to engage not only in quantitative but also qualitative strategies to extend their tenure. We run our tests on a large sample of US firms' 10-K reports and show that highly able CEOs use a more optimistic tone early in their careers. Overall, our evidence indicates that optimistic tone is used by CEOs to signal their superior performance ability. Firms with more optimistic disclosures present higher value-weighted cumulative abnormal returns around last quarter earnings announcements, and are more likely to access future debt, engage in greater future capital investment and pay more future dividends. Thus, we show that skilled CEOs engage in qualitative strategies (i.e., narrative disclosure) at the beginning of their tenure to ensure long tenures.

When the board needs to hire a new CEO, the options are choosing an internally or externally appointed CEO. Boards need to look at the pool of potential new CEOs which includes every

insider and outsider who has the required abilities to be the next CEO of the firm. Donatiello et al. (2018) run a survey to directors of the largest US companies and find that 73% of the interviewed directors agree on that less than 5 people (including both insiders and outsiders) have the required abilities to be the next CEO. Then, it is fair to assume that any shock that decreases the pool of replacement CEOs is likely to affect firms. In this line, in Chapter 2, ***CEO Labor Market Incentives and Accounting Quality: The Unintended Consequences of Trade Secret Regulations***, we examine the impact of a decrease in the pool of replacement CEOs on the incumbent CEO level of entrenchment and firms' financial reporting quality. By integrating the staggered enactment of the Uniform Trade Secrets Act with the pre-existing pool of talent, we develop a novel firm and time specific measure of changes in the pool of replacement CEOs. We find that decreases in this pool lead to longer tenure, lower forced turnover, and higher compensation for incumbent CEOs, as well as lower financial reporting quality and narrative disclosure quality. Decreases in the pool of replacement CEOs are also associated with lower CEO-firm match, lower firm efficiency, lower performance and higher over-investment. The results are robust to alternative measures of decreases in the pool of talent and to controlling for additional trade secrets protection measures. Our collective findings indicate that labor market institutions are important drivers of firm outcomes and accounting quality.

Corporate boards have also a role in takeover situations. During the early 1980s there were several waves of hostile takeovers affecting even to the largest US companies (Gompers et al., 2003). As a result, firms and states implement antitakeover provisions and laws, respectively. In Chapter 3, ***Takeover Protection through Narrative Disclosure***, we assess the effect of hostile takeover susceptibility on narrative disclosure. We predict that firms use narrative disclosures as a takeover defense mechanism. Our results show that managers of firms with higher likelihood

of receiving an unwelcome bid have more negative and pessimistic tone in their 10-K reports. We also find that our main results are stronger for firms more attractive for potential acquirers and that more pessimistic firms in hostile environments are less related with new acquisition announcements. Our results are robust to a shock that represents lower need of firm-initiated antitakeover provisions.

Chapter 1

Optimistic Disclosure Tone and CEO Career Concerns

1.1. Introduction

We examine the association between CEO career concerns, CEO ability, and tone in corporate narrative disclosures. In particular, we investigate CEOs use of optimistic tone in 10-K narrative disclosures. Optimistic tone refers to the use of abnormally positive language in firm disclosures, given current and past firm performance (Huang et al. 2014a, 2014b). CEOs usually hold the most power within the company (Andrews, 1987), but their real managerial abilities may be, at least partly, unknown to markets (Pan et al., 2015). This is especially true early in their careers, giving rise to incentives to improve their performance, but also, to enhance and embellish it (Holmstrom, 1999). Prior literature confirms that managers worry about how firm performance influences the labor market assessment of their ability and performance and also, that they are willing to take real and reporting decisions to improve this perception and build their reputations (e.g., Nagar, 1999; Ali and Zhang, 2015).

CEO career concerns stem from markets' and boards of directors' evaluations, which, if considered subpar, may lead to their dismissal (Hermalin and Weisbach, 2012). Even in the absence of such extreme measures, CEO reputation is a valuable asset associated with substantial long-run benefits. Managers assessed to be of superior ability enjoy greater autonomy and compensation (Hermalin and Weisbach, 2017), not only during their tenure, but also, after leaving the firm, through improved post-retirement benefits (Gibbons and Murphy, 1992).

Managerial ability appraisal eminently occurs during the early years of CEO tenure, where corporate performance and earnings news have a major impact on CEO assessment (Hermalin and Weisbach, 1998; Pan et al., 2015). Managers, aware of the importance of these early assessments, are expected to select those reporting and disclosure choices that enhance the perceptions of third parties, signaling their type. Consistent with career concerns driving CEO reporting choices, Ali and Zhang (2015) show greater income-increasing earnings management at the beginning of CEO tenures. We build on this prior work and predict that CEOs also use narrative disclosure tone to influence their assessments, given that markets and boards of directors examine CEO ability using all available information (Hermalin and Weisbach, 2012; Pan et al. 2015), and that tone drives markets' attention (Elliot et al*.,* 2015) and has economic consequences (e.g., Tetlock, 2007; Tetlock et al., 2008; Feldman et al., 2010).

Against this backdrop, differences in CEOs skills become crucial to understand managerial disclosure choices. However, little is known about what narrative practices managers may devise to enhance ability assessment, and, importantly, how these practices link to their true ability.

We argue that highly able CEOs anticipate the importance of narrative tone and use it in response to career concerns, to improve the beliefs of third parties concerned with CEO assessment. High ability CEOs differently use tone to signal their ability and superior future performance for at least two reasons. First, the use of optimism in narrative disclosures increases litigation risk (Rogers et al., 2011), acting as a deterrent to engage in cheap talk. Second, optimism in disclosure unravels, i.e., it is soon revealed to be either informative or opportunistic. This is because managerial disclosures trigger additional information searches by analysts and other market participants (Barron et al., 2002). CEOs who fail to meet their voluntary disclosures may damage their reputation and the firm's image (Ferreira and Rezende, 2007), leading to a loss

of investors' confidence (Graham et al., 2005). These CEOs would self-reveal as the low ability ones. Given these costs, low ability CEOs are unlikely to imitate high ability CEOs' narrative practices. In line with this view, Nagar (1999) shows that managerial uncertainty about performance evaluation can deter managerial disclosure, and that it is the 'not very talented' managers that are particularly prone to nondisclosure.

Thus, while high ability CEOs could use optimistic tone to assuage career concerns, the opposite may hold for low ability CEOs. Without considering CEO ability or tenure, Huang et al. (2014a) show that optimistic narrative disclosures relate, on average, with managerial attempts to mislead market's perceptions of future firm results and hide poor future realizations. Assuming that optimistic disclosures attract market attention and increase litigation risk (Rogers et al., 2011), new CEOs may use lower optimistic tone to avoid attracting excessive market attention, particularly, given the evidence that these CEOs report inflated earnings via the use of income-increasing accruals (Ali and Zhang, 2015). Also, new CEOs may prefer to use big bath strategies, and blame their predecessors for any initial poor firm performance. This would lead to negative disclosure tone in CEO early years of tenure.

Given the above discussion, we predict that high (low) ability CEOs use greater (lower) optimistic tone early in their tenures. As CEO tenure progresses, managers develop a reputation and, absent any shocks, monitoring decreases (Dikolli et al., 2014; Pan et al. 2015), as they are expected to maintain or improve their knowledge and skills (Wu et al., 2005). Thus, optimistic tone is less useful after the early years. The finding in Ali and Zhang (2015) that CEOs do not engage in earnings management in the middle years of their careers is consistent with this attenuation in career concerns. Regarding the final year of tenure, Brickley et al. (1999) show that strongly-performing departing CEOs are more likely to serve in their own board or join

other boards. Monetary post-retirement benefits may also hinge on late career performance (Kalyta, 2009). Thus, CEOs may face career concerns at this late stage, if they stay active in the job market. However, CEOs may be entrenched by this point, making such strategies redundant. In line with this later argument, Holmstrom (1999) analytically demonstrates that managers work harder in the first years of tenure than in the last one. In addition, it is unclear whether CEOs can perfectly foresee which will be their last year in the job and thus, disclosure tone in the last year of tenure is an empirical question of interest.

We analyze the links between CEO ability, CEO career concerns, and tone in 10-K reports using a large sample of US firms for the period 1993 to 2013. To conduct our tests, we follow the approach of Ali and Zhang (2015), who study the links between CEO career concerns and earnings management. We follow Huang et al. (2014a) to calculate optimistic disclosure tone, and condition our analyses on managerial ability as measured by Demerjian et al. (2012). Our results show that highly skilled CEOs use more optimistic tone, particularly, as a response to career concerns. For our sample of CEOs, optimistic tone is linked to higher future access to debt, greater future capital investment and dividend payments. Overall, this suggests that CEOs use optimistic tone to convey their true managerial ability. We validate that our CEO ability proxy measures management skills by showing that CEO ability is negatively associated with the probability of forced turnover. Forced turnover is also less probable for CEOs with more optimistic disclosure tone. Overall, our evidence is consistent with CEOs influencing firm narratives, and with CEOs narrative disclosures being driven, at least partly, by their career concerns.

Our main results are not sensitive to the use of an alternative measure of CEO ability developed by Rajgopal et al. (2006), to the inclusion of CEO fixed effects (Abowd et al., 1999),

to controlling for managerial sentiment, or for earnings management as in Ali and Zhang (2015). This latter analysis permits providing novel evidence on the complementarities between reporting and disclosure choices, adding to the work of Lo et al. (2017).

To appease endogeneity concerns, we use the 2003 New York Stock Exchange (NYSE) and NASDAQ board regulations to identify a plausible exogenous shock to career concerns. We apply a difference-in-differences approach following Guo and Mauslis (2015) and identify those firms that did not comply with the 50% board independence threshold as our treatment firms. These firms experience an exogenous increase in board independence, and thus, in CEO monitoring and career concerns. The results obtained confirm that career concerns drive narrative disclosure tone. Additionally, we instrument CEO ability with the average ability of the rest of CEOs by industry and year and obtain comparable results.

Finally, confirming that optimistic tone can have signaling value for high ability CEOs, we provide evidence of positive economic consequences associated with optimistic tone. Specifically, we show that optimistic tone generates higher value-weighted cumulative abnormal returns in different windows around last quarter earnings announcements. Second, we show that firms using more optimistic tone appear to enjoy greater market trust and have access to greater future debt, engage more in capital investment and pay more future dividends. This indicates optimistic tone may be perceived as a signal of true managerial skills.

We make a number of contributions to prior research. First, we contribute to the literature on narrative disclosure. There is limited work explaining variation in narrative disclosure quality and exploring what CEO characteristics may lead to firm-level variation in narratives. The closest work to ours is by Davis et al. (2015) and Bochkay et al. (2017), who study CEO language in conference calls. Although they focus on CEO tenure rather than career concerns,

the finding in Bochkay et al. (2017) that CEOs disclosures in conference calls varies over tenure is consistent with our results. Davis et al. (2015) also show that tone in conference calls is related with manager-specific factors, particularly with early career experiences affecting managerial beliefs. Our work complements their findings, by investigating a different disclosure setting which reflects different incentives and CEO concerns. We focus on 10-K reports because, as stated by Kothari et al. (2009a), they contain different sections where managers can disclose information, and constitute a formal communication discourse. Thus, they are markedly different from the content of more spontaneous and interactive discourses, such as conference calls with analysts and other attendants. The later can provide rich information sets (including verbal and non-verbal cues) but may also contain irrelevant and boiler plate statements (Glassman, 2003) and importantly, CEO tone is likely driven by the questions and pressure imposed by the third parties present in the call. We also contribute to prior work studying CEO reporting choices by considering narrative disclosure. This is of interest, given that both quantitative and qualitative features are used to evaluate managerial abilities and firm performance (Amir and Lev, 1996), and there is a limited research on the links between reporting and disclosure. Finally, we add to the recent literature studying the links between managerial ability and accounting quality (e.g., Baik et al., 2011; 2017; Demerjian et al., 2013). We provide novel empirical evidence consistent with Nagar (1999) suggesting that disclosure strategies are linked to managerial human capital, and to CEO concerns about performance assessment evaluations.

The rest of this paper is organized as follows. Section 1.2 reviews the literature and presents the hypotheses. Sections 1.3 and 1.4 describe the method, and present the sample and main results. Sections 1.5 and 1.6 provide robustness and additional analyses and Section 1.7 concludes.

1.2. Prior Research and Hypotheses Development on Disclosure and CEO Career Concerns

1.2.1. CEO Discretion in Reporting and Disclosure

CEO disclosure can be informative of true firm performance (Grossman, 1981; Milgrom, 1981). However, managerial disclosure is often planned, focusing on news that emphasize positive aspects and can affect stock prices favorably, while deemphasizing negative news (Verrecchia, 1983; Dye, 1985). Prior research presents evidence that managers discretionary report and disclose information, exploiting their superior information advantage for personal gain (Yermack, 1997; Aboody and Kasznik 2000), and that they are willing to report optimistic news and withhold bad news, such as dividend cuts, to avoid negative market reactions (e.g., Lang and Lundholm, 2000; Kothari et al., 2009a; Ali et al., 2015; Campbell, 2018).

Regarding the use of narratives, the literature is less developed. Overall, the evidence reported indicates that narratives have information content (Merkley, 2014), drive markets' attention (e.g., Elliot et al*.,* 2015) and have economic consequences (Gibbins et al., 1990; Tetlock, 2007; Tetlock et al., 2008; Huang et al., 2014b), but also, that significant firm-level heterogeneity exists along narrative dimensions such as financial statements readability (e.g. Li, 2008), or tone (Frazier et al., 1984; Feldman et al., 2010).[1] Importantly, prior research suggests that managers have narrative styles that can change in connection to their goals, ability and experience. For example, Bonsall et al. (2013) and Huang et al. (2014a) note that managers are more willing to use optimistic disclosure tone to avoid negative market reactions. Prior work also

[1] This prior literature generally studies narrative disclosures by using content analysis techniques (e.g., Francis et al., 1997; Beretta and Bozzolan, 2014). Textual analysis is a subset of content analysis important to study managerial writing style that has significantly developed thanks to machine-based analyses (Breton and Taffler, 2001; Kothari et al., 2009b). A seminal paper in this literature is Frazier et al. (1984) who show that the annual reports content analysis can be useful to forecast performance.

predicts that CEOs are more credible when they have greater expertise and an easy-to-understand communication style (see, e.g., Fischer and Verrecchia, 2000; Rogers and Stocken, 2005). The evidence in Davis et al. (2015) supports the existence of this manager-specific component in narrative tone. They show that CEO and CFO language styles in conference calls have an impact on capital markets, as measured by the value-weighted cumulative market-adjusted returns in the two-day window centred on the conference call date.

1.2.2. CEO Career Concerns and Optimistic Disclosure Tone

CEOs do not change firms often, and hence, their abilities can rarely be assessed relative to prior achievements (Brickley et al., 1999). Similar concerns pervade internal appointments, as the required skills for a CEO are different from those needed in other managerial positions (Gibbons and Murphy, 1992). This means that when companies appoint new CEOs, their ability is not fully known and boards need to uncover their type. This information asymmetry may create CEO incentives to engage in practices to build their reputation and influence the market assessment of their abilities.[2] Career concerns thus emerge in connection with managerial ability reputation building. CEOs have incentives to construct and preserve a good reputation that secures them a long tenure, greater compensation and more freedom in decision making (Fama, 1980; Gibbons and Murphy, 1992; Hermalin and Weisbach, 1998). In turn, long tenures are secured by influencing insiders' and outsiders' perceptions of firm performance and of their ability. Godfrey et al. (2003, p. 98) note that the future remuneration of managers is revised by labor markets "*depending on the perceived success or failure of the firm they are managing.*"

[2] Fama (1980), Diamond (1989), Holmstrom (1999) and Milbourn (2003) refer to CEO reputation as the market assessment of their managerial abilities. Similarly, Francis et al. (2008, p. 114) consider that CEO reputation "*can be thought of as the totality of enduring images that major stakeholders form based on perceived CEO performance, his or her ability, and values*."

Performance assessment is not equally spread throughout CEO tenure. CEOs are subject to greater scrutiny at the beginning of their tenure. Indeed, Coyne and Rao (2005) find that companies dismiss one third of their CEOs within their three first years of tenure, and Vancil (1987) argues that CEOs manage the beliefs of boards and senior staff by promoting their management skills during their first and second year in the job. Also confirming this view that managerial assessment happens early on in their tenure, Pan et al. (2015) develop a Bayesian learning model showing that when a new CEO arrives, markets use firm performance to update their beliefs about CEO ability, increasing return volatility. This volatility decreases as CEO tenure increases, because markets know the CEO better in terms of ability and skills. Hence, CEO career concerns are highest during the early years of tenure.

Against this backdrop, the association between CEO career concerns and narrative tone is not obvious. Bochkay et al. (2017) argue that optimistic disclosures in conference calls decrease over CEO tenure, reflecting the reduction in the uncertainty over CEO ability to manage the firm and to create value. These authors claim that CEOs use relatively more positive tone early in their careers to positively influence outsider's perception of their managerial ability. However, this evidence on tone in conference calls may not extend to optimism in the narratives of legal documents, such as the firm audited financial statements. Optimistic disclosure tone increases attention and litigation risk (Rogers et al., 2011). For new CEOs who face stringent monitoring (Pan et al., 2015) and are likely managing earnings upwards (Ali and Zhang, 2015), a plausible strategy may be to keep a neutral tone to avoid increased market scrutiny over managed earnings. This strategy would be in line with the arguments in Lo et al. (2017), who show that earnings management is usually accompanied by obfuscation in narratives and low readability. Further, Huang et al. (2014a) show that managers use optimistic tone to hide negative performance. If

new CEOs opt for 'big bath' strategies (Pourciau, 1993; Murphy and Zimmerman, 1993), they would likely blame departing CEOs of poor firm performance, leading to lower optimistic tone. Finally, new CEOs may need to secure stakeholders' confidence by establishing an initial and realistic set of performance goals (Vancil, 1987), limiting optimism. Thus, we expect that, on average, new CEOs use less optimistic tone. Formally, our first hypothesis is:

H1: *On average, CEOs use less optimistic narrative disclosure tone during their early years of tenure.*

After this initial phase, CEOs may reach a stage where they have developed a reputation based on past actions and financial results obtained. By then, they likely hold significant stock in the company (Hambrick and Fukutomi, 1991) and directors and other senior staff are personally loyal to them, increasing their bargaining power (Graham et al., 2017), and lowering their monitoring pressures (Dikolli et al., 2014). Thus, long-tenured CEOs do not have the same incentives as recently appointed ones (Hambrick and Fukutomi, 1991; Goldman et al., 2017). They have survived retention decisions taken by boards (Milbourn, 2003), and their concern is mainly focused on reputation protection rather than reputation building (Diamond, 1989). The literature suggests that long-tenured CEOs become more risk-averse (Simsek, 2007) by, for example, reducing R&D expenditures (Barker and Mueller, 2002), capital expenditures (Dechow and Sloan, 1991), or international acquisitions (Matta and Beamish, 2008). As McClelland et al. (2012, p. 1389) claim: "*long-tenured CEOs will (...) be more likely to value the status quo versus the unknown outcomes of enacting change.*" Therefore, during these intermediate years of tenure, CEOs likely become interested in maintaining stable firm's results, and focus on their own career security. This would lead to limited discretion in disclosure tone in these middle years, consistent with H1, which predicts discretionary tone is concentrated in the early years of CEO tenure.

A potentially interesting period is the turnover year. CEOs may increase post-retirement benefits by improving their late-career performance (e.g., Kalyta, 2009). Thus, departing CEOs may inflate earnings (Zhang, 2009) or use more optimistic tone to showcase their ability. However, the relationship between CEO final year and disclosure tone is difficult to predict. Prior research shows that CEO turnover is often linked to poor performance (Coughlan and Schmidt, 1985; Warner et al.; 1988, Weisbach, 1988). Moreover, CEOs may not be able to know their final year in advance. Additionally, during the turnover year, the power of the departing CEO is likely to diminish in favor of the incoming CEO. Then, departing CEOs may not be able to influence narrative disclosures, as 10-Ks are likely prepared weeks after the fiscal year end by the new managerial team. Thus, we make no predictions about tone in CEOs final year.

1.2.3. CEO Ability and Optimistic Disclosure Tone

While investors and boards of directors may not be able to perfectly discern the ability of all potential candidates, it is fair to assume that boards seek to appoint highly able CEOs, i.e., those with greater skills and more business knowledge, and who can lead to better firm performance (Demerjian et al., 2013).[3] The literature studying the links between managerial ability and financial reporting quality presents somewhat mixed results (Francis et al., 2008), but generally supports the view that high ability CEOs provide better disclosures and higher financial reporting quality. De Franco et al. (2017) show that highly able managers obtain lower bank-loan prices mainly through improved financial disclosure. High ability CEOs also make lower earnings forecasts' errors (Baik et al. 2011), and have fewer restatements, higher earnings and accruals persistence, and higher quality accruals estimations (Demerjian et al. 2013).

[3] Despite some concerns that CEOs play a limited role in the running of their companies (Bebchuk and Fried, 2004), extant prior evidence suggests that CEOs matter (Bertrand and Schoar, 2003; Schoar and Zuo, 2016).

In terms of human capital, the literature suggests that reputed CEOs have more to lose if they make poor accounting and disclosure choices (Francis et al., 2008). Managers are aware that disclosure of their private information, via narratives or quantitative disclosure practices, is likely to trigger additional information searches by analysts and other market participants (Barron et al., 2002), leading to revisions in the capital market's assessment of their human capital. This creates uncertainty about managerial future wages, as argued in Nagar (1999), because managers have incomplete knowledge about internal and external markets' information sets, such as their prior beliefs or the processes used by investors to value the information disclosed. Nagar (1999) demonstrates that this uncertainty affects managerial disclosure decisions and shows that nondisclosure is more prevalent in untalented managers.

Building on this prior research, we expect that high ability CEOs, on average, are able to produce better future firm performance, to become better informed about capital markets information sets, and also, to produce more informative disclosures than their low ability counterparts. Thus, we expect that they will have different narrative disclosure practices, to signal their superior ability and separate themselves from less talented managers. Given the above discussion, we formulate the following hypothesis:

***H2**: CEOs with higher ability use more optimistic narrative disclosure tone.*

Thus, we expect that high ability CEOs apply narrative disclosure practices to show their managerial type rather than as an opportunistic behavior. This is particularly likely given that optimistic narrative disclosure attracts attorneys' attention and increases litigation risk (Rogers et al., 2011). Therefore, only high ability CEOs could credibly communicate strong future firm performance by using optimism. Low ability CEOs are unlikely to imitate high ability ones in the use of optimistic narratives, to avoid increased litigation risk, but also, because it is eventually

revealed, during CEO tenure, whether optimism was warranted or not. Low disclosure quality and failure to meet expectations would reveal managerial type as low ability. Consistent with this view, prior research indicates that failure to meet voluntary disclosures is likely to lead to a loss of reputation and trust (Graham et al., 2005; Ferreira and Rezende, 2007).

Following the theoretical arguments in Nagar (1999), we predict that CEO human capital influences managerial discretionary disclosure choices, and specifically, disclosure tone. Given our above discussion with respect to how career concerns lead to the development of predictable patterns in CEO narratives, we expect that the differences in narrative tone between early and late years will be more pronounced for high ability CEOs. Oyer (2008) and Axelson and Bond (2015) show that when new employees in high profile jobs report poor performance, they are labeled as 'low ability,' which is likely to negatively affect their whole careers. In the spirit of Pan et al. (2015), it is expected that disclosure tone practices reflect managerial ability. Therefore, we expect high ability CEOs to be particularly able to manage early career uncertainty, and to develop differential practices in their narrative disclosures, to signal their superior quality in the early years of their careers, positively impact the market assessment of their ability, build their reputations, and increase investors' and boards of directors' trust in them. In contrast, low ability CEOs may prefer to engage in big bath strategies early in their tenure (e.g., Elliot and Shaw, 1988, Porciau, 1993; Murphy and Zimmerman, 1993), to facilitate obtaining subsequent strong performance. This type of strategies would lead to lower optimistic tone early on in their tenures (as predicted under H1), if they opt to clean up the financial statements and attribute poor performance to their predecessors.

Thus, our final hypothesis is as follows:

H3: *Optimistic narrative disclosure tone is greater in the early years of high ability CEOs' service than in the later years.*

1.3. Empirical Constructs on Optimistic Disclosure and CEO Career Concerns

1.3.1. Main Variables Measurement

Variation in disclosure tone in 10-Ks is likely affected by firm-specific variables. For example, if a firm has experienced strong performance in the past, it is likely that, *ceteris paribus*, tone will be more positive. For our analyses, we are not interested in past performance, but rather, in managerial use of tone to signal their quality and higher ability. To overcome this problem, we follow Huang et al. (2014a), who create a proxy of abnormal tone not driven by firm's innate characteristics and past performance. Specifically, they decompose narrative disclosure tone into normal and abnormal components, using the following model:

$$\begin{aligned} Tone_{it} = {} & \beta_0 + \beta_1 Earnings_{it} + \beta_2 Returns_{it} + \beta_3 Size_{it} + \beta_4 BTM_{it} + \beta_5 Std\ Returns_{it} + \\ & + \beta_6 Std\ Earnings_{it} + \beta_7 Firm\ Age_{it} + \beta_8 Busseg_{it} + \beta_9 Geoseg_{it} + \beta_{10} Loss + \\ & + \beta_{11} Change\ Earnings_{it} + \beta_{12} afe + \beta_{13} af + u_{it}, \end{aligned} \quad (1)$$

where disclosure tone (*Tone*) is measured using the Loughran and McDonald lists of positive and negative words created specifically for financial documents,[4] and the remaining variables are defined in Appendix 1. Appendix 2 reports the estimation results of model (1), both with and

[4] Other widely used word lists in the accounting and finance literature are the Harvard's General Inquirer (GI), Diction and the list developed by Henry (2008). Henry (2008) developed one of the first words lists for analyzing the language used in earnings press releases. However, its main drawback is the limited number of words which do not include relevant keywords common in financial texts such as 'loss,' 'losses,' 'impairment' or 'adverse' (Loughran and McDonald, 2016). Harvard GI and Diction word lists have been used in a number of studies as they were the first word lists publicly available. Diction word list can be purchased in *www.dictionsoftware.com*. However, the most appropriate word list for financial documents is the one developed by Loughran and McDonald (2011; 2015).

without analysts' variables. Following Huang et al. (2014a), our proxy for optimistic disclosure, *Optimism* is the residual of the annual cross-sectional regressions obtained from model (1).

To construct *Tone*, we use the 2014 updated version of the Loughran and McDonald (2015) word list, which contains 354 positive and 2,329 negative words.[5] This list presents two important advantages: 1) it is more complete than other lists developed in the literature as it comprises every common positive and negative word; and 2) it is the only existing word list customized to financial documents and specifically created from 10-Ks (Loughran and McDonald, 2016), making it suitable to derive our proxy for CEO optimism. We download the 10-K reports from EDGAR using a *php* algorithm. The parsing mechanism of 10-K fillings is described in Appendix 3. In total, we examine 516,628,725 words containing 3,465,099 positive words and 7,595,709 negative words in a total of 30,122 10-K reports.[6] We find more negative than positive words which is consistent with prior literature and is a direct consequence of the dictionary, which is overpopulated with negative words to account for the fact that managers may 'hide' negative information by using positive words. Indeed, companies, unconditionally of their results, use more positive words to create an overall positive tone (Schleicher and Walker, 2010). As Loughran and McDonald (2016, p. 35) state: "*a careful manager might use 90% positive words in dismissing an employee*." This average negative tone of 10-Ks may also be related to managerial attempts to appease litigation concerns (Huang et al., 2014a).

Consistent with Huang et al. (2014a), we find that disclosure tone is more positive when firms present positive earnings, are smaller and younger, have fewer business segments and smaller book-to-market ratio, present less losses, lower change in earnings and have more

[5] We thank the authors for updating and making available the data at: *http://www3.nd.edu/~mcdonald/Word_Lists.html*.
[6] These filings include 10-K, 10-K405, 10-KSB and 10-KSB40. We remove all the amended reports (/A) because we want to analyze disclosure tone of CEOs in the first version of the report. This is consistent with prior research.

analyst forecast errors. Differently to Huang et al. (2014a), we find that returns relate in a negative and statistically significant way with disclosure tone. Our results also show that firms present more positive disclosure tone when they have less volatile returns and earnings indicating that the use of positive disclosure tone may relate with better firms. Finally, we find that firms with less geographical segments present more positive disclosure tone consistent with the results obtained for the business segments. Both elements proxy for firms' complexity.

Some of our results in model (1) differ from Huang et al. (2014a) because some elements of our study are different. First, Huang et al. (2014a) study press releases instead of 10-K reports. We focus on 10-K reports because they contain formal information and are composed by different sections where managers can disclosure information addressed to different users (Kothari et al., 2009a). Recent research by Davis and Tama-Sweet (2012) shows that managers use different disclosure practices in earnings press releases than in 10-K reports. Second, Huang et al. (2014a) keep financial firms in their analysis. We remove them because, as Jegadeesh and Wu (2013) state, some words that have negative meaning in non-financial firms (e.g., *risk* or *casualty*) might not be negative for financial firms. Third, the sample periods are different. For Huang et al. (2014a) the sample period is from 1997 to 2007 while our sample period spans the period between 1993 and 2013. Finally, we should note that the adjusted R-sq. obtained in our model (1) is 0.197 and that we obtain statistical significance for every variable except for analyst following. Therefore, we conclude that model (1) explains *Tone*, and thus, the residuals from this model may be used to assess abnormal tone (i.e., optimistic or pessimistic narrative tone).[7]

[7] Huang et al. (2014a) obtain an adjusted R-sq. of 0.04 and they obtain statistical significance for eight variables.

1.3.2. Main model on Optimistic disclosure tone and CEO Career Concerns

To test our hypotheses and analyze the relationship between career concerns, CEO ability, and optimism in 10-K reports, we use the following model:

$$\begin{aligned}\text{Optimism}_{it} = \beta_0 + \tau_i + \varphi_t + \beta_1 \text{Early Years}_{it} + \beta_2 \text{CEO Ability}_{it} * \text{Early Years}_{it} + \\ + \beta_3 \text{Final Year}_{it} + \beta_4 \text{CEO Ability}_{it} * \text{Final Year}_{it} + \beta_5 \text{CEO Ability}_{it} + \\ + \beta_6 \text{Big Bath}_{it} + \beta_7 \text{ROA}_{it} + \beta_8 \text{CEO Age}_{it} + \beta_9 \text{Leverage}_{it} + u_{it},\end{aligned} \quad (2)$$

where *Optimism* are the residuals obtained from model (1) annual cross-sectional regressions. Model (2) includes firm- (τ_i) and year- (φ_t) fixed effects. Firm fixed effects control for time invariant firm-specific unobservable characteristics and year fixed effects control for any shock that occurs in a given year. This helps to assuage endogeneity concerns. *Early Years* proxies for career concerns at the beginning of CEO tenure and equals one when CEOs are in the first three years of their tenure; zero otherwise. We use the first three years as a cutoff following Ali and Zhang (2015).[8] In addition to enhancing the comparability of our findings with prior research, this cut-off fits our theoretical approach. Many companies have staggered boards, where directors are appointed to serve for three years. In non-staggered boards, directors are reappointed annually. This means that, in a period of three years, *all* directors are subject to reelection (Srinivasan, 2005), with CEOs likely influencing these appointments. Additionally, Coyne and Rao (2005) find that one third of CEOs are dismissed during their three first years of tenure and Pan et al. (2015) show that markets update their assessments about CEO ability mainly during the three first years of tenure. Thus, the first three-year period is crucial for new

[8] Ali and Zhang (2015) explain that Gibbons and Murphy (1992) use as cutoff the median value of the variable "CEO tenure" divided by two which is equal to four years. In Ali and Zhang (2015) the median value of the variable tenure is six which divided by two equals three. In our sample, the median for CEO tenure is seven and divided by two would be three and a half years. However, following the spirit of Ali and Zhang (2015) and previous evidence (Coyne and Rao, 2005; Srinivasan, 2005; Pan et al. 2015) we also use three years as a cutoff.

CEOs to showcase their abilities, and also, when career concerns are arguably greater. Model (2) also includes a variable that identifies the turnover year, *Final Year,* measured as one when CEOs are in the last year of their tenure; zero otherwise.

Our fundamental research question links to CEO ability assessment and whether high ability CEOs differentiate themselves by using optimistic tone. To answer these questions, we include *CEO Ability* in model (2) and its interaction with our career concerns proxies. CEO ability is measured using the MA-Score of Demerjian et al. (2012), which assesses managerial efficiency in generating revenues, given a set of firm-specific characteristics (size, market share, cash availability, life cycle, operational complexity and foreign operations). We use the MA-Score updated to 2013.[9] This measure identifies and separates firm- from managerial-efficiency (Demerjian et al., 2013) and provides a proxy of superior management performance, our construct of interest. To obtain a clearer interpretation, we take the decile ranks (scaled to take values between 0 and 1) of the MA-Score, following the procedure in Barth et al. (2008). This also helps to reduce concerns about measurement error in the original proxy. We expect that high ability CEOs use more optimistic tone, and manage career concerns early in their tenure through optimism in narratives. Thus, under H2 and H3, we predict that β_2 and β_5 will be positive in model (2), showing that CEOs with higher ability are aware of the market impact of qualitative disclosure practices and use more optimistic disclosure, particularly, during their early years of tenure. In model (2), optimistic tone in the first years of CEO tenure is compared to tone in the middle years. Given our interactions, the variable *Early Years* (*Final Year*) captures optimism at the beginning (in the last year) of tenure for low ability CEOs. Under H1, we predict that β_1 will

[9] We thank the authors for updating and making available the data at: *http://faculty.washington.edu/pdemerj/data.html*. This measure has been recently applied by other researchers such as De Franco et al. (2017).

be negative, reflecting that low ability CEOs use a less optimistic tone than highly able ones, particularly early on in their tenures. We make no predictions for *Final Year*.

Following prior literature such as Rogers et al. (2011), Davis et al. (2015) or Haggard et al. (2015) we include a vector of control variables in model (2) which may affect optimistic disclosure and reporting quality and are not included in model (1). By including these controls, we can isolate the effect of CEO career concerns on optimistic disclosure. In particular, we control for big bath accounting (Elliot and Shaw, 1988), and predict that it will be accompanied by less optimistic disclosure in 10-Ks reports. We include a *Big Bath* dummy variable which proxies for large losses, asset write-downs, or other non-recurring charges (Haggard et al., 2015), and equals one for any fiscal year-end observation for which Special Items in Compustat is negative and exceeds 1% the lagged firm's total assets and zero otherwise (Elliot and Shaw, 1988).[10] *ROA* is the return-on-assets ratio. We expect that strong accounting performance will be reflected in lower need of discretion in narrative disclosure practices, leading to lower optimism. *CEO Age* is the age of the CEO. Long- tenured CEOs are likely to be older and long tenure leads to lower reputation concerns. Thus, it is expected that they use a lower optimistic disclosure. Finally, *Leverage* is total debt scaled by total assets. This variable controls for distressed firms. Firms may try to overcome the negative effect of reporting losses or of being highly leveraged by explaining it away in an optimistic way (Loughran and McDonald, 2016).

1.4. Sample and Results Chapter 1

[10] Elliot and Shaw (1988) do not include asset write-downs that can be classified as non-discretionary. Following Kirschenheiter and Melumad (2002) and Haggard et al. (2015) *we use all the Special Items* in Compustat. Removing some non-discretionary items could lead to exclude situations where non-discretionary events are used by managers to fulfill self-serving objectives.

CEO characteristics are obtained from ExecuComp. Financial and accounting data come from Compustat. The variables needed to calculate analysts' proxies are obtained from I/B/E/S. Merging the four databases results in a total of 12,746 firm-year observations composed by 1,461 firms and 2,382 CEOs for the period 1993 to 2013. We remove financial firms because their characteristics and disclosure tone differ from non-financial firms, as previously discussed. After removing financial firms, our final sample consists of 11,169 firm-year observations representing 1,251 US non-financial firms and 2,085 CEOs for the period 1993 to 2013, although we lose some observations when running robustness checks.

Table 1 Panel A presents descriptive statistics of the main variables. *Tone* is on average negative, suggesting that CEOs in our sample include more negative than positive words in 10-Ks, consistent with how the dictionary is defined and with previous literature (Loughran and McDonald, 2016). *Optimism* are the residuals from the Huang et al. (2014a) model,[11] and have a positive mean and median suggesting that, on average, CEOs in our sample use optimistic tone. CEOs are, on average, 57 years old.[12] CEOs stay in the job 9 years on average.[13] In Appendix 4, Panels A and B we show the 25 most common positive and negative words, respectively, *loss* (and *losses*) is the most commonly used negative word, while *best*, *beneficial* and *effective* are the most used positive words. In Figure 1 we can observe the percentage for the top 50 most frequent words. The first 12 most frequent negative words have higher percentages than the positive ones. This is in accordance with our expectations and the Zipf's law: a phenomenon in natural language processing stating the existence of a small number of very high-frequency

[11] *Optimism* is multiplied by 100 for interpretation purposes.
[12] As an example of an extreme observation, Walter Joseph Zable served as CEO in Cubic Corporation for 62 years being the world's oldest CEO with 97 years old.
[13] Consistent with previous studies, in our sample, only 58 CEOs (2.78%) are CEOs in more than one firm.

words and a large number of very low-frequency words (Loughran and McDonald, 2011). Overall, our narrative evidence is consistent with prior findings, and validates our parsing procedure.

Table 1 Panel B presents the Pearson and Spearman correlation coefficients. We find a negative and significant correlation between *Optimism* and *Early Years*, and between *Tone* and *Early Years*, suggesting that, on average, new CEOs do not use more optimistic disclosure tone, consistent with H1. *CEO Ability* is positively correlated with both *Tone* and *Optimism*, suggesting that high ability CEOs may differently use disclosure tone, consistent with H2. *ROA* is positively correlated with *Tone* and *Optimism* (under Spearman correlations), indicating that CEOs that obtain better economic results are more optimistic in their 10-Ks. *Big Bath* presents a negative and significant correlation with *Tone* and *Optimism* and a positive correlation with *Early Years* and *Final Year*. This is as expected and consistent with these accounting practices being taken surrounding CEO changes and being accompanied by less optimistic disclosure tone, possibly, because new CEOs attribute departing CEO any poor results. *Big Bath* is also negatively correlated with *CEO Ability* potentially indicating that low ability CEOs are more likely to engage in these accounting practices, to facilitate future strong performance.

1.4.1. Main Results on Optimistic Disclosure and CEO Career Concerns

Table 2 Panel A presents the results of running model (2). For completeness, we report four sets of results. The first column presents the model including only *Early Years* to show the relationship between the first years of CEO tenure and the level of disclosure optimism used by the average CEO. Next, in column 2, we add *CEO Ability* and its interaction with *Early Years*, our baseline model (2). Finally, columns (3) and (4) show results when including all controls and

both *Early Years* and *Final Year* as proxies for CEOs career concerns. Throughout, *Early Years* presents a negative and significant coefficient, consistent with H1. This indicates that the average CEO in our sample uses less optimistic disclosure tone in response to career concerns. Given our model specification, the negative and statistically significant coefficient of *Early Years* in columns (2), (3) and (4) shows that it is CEOs with low ability who use less optimistic tone at the beginning of their tenure compared to CEOs in their middle and final year of tenure (columns 2 and 3) and compared to the middle years of tenure (column 4). The results are consistent when we add control variables. Overall, this suggests that low ability CEOs react to career concerns by using a less optimistic tone, potentially lowering scrutiny and future litigation risk.[14]

Regarding CEO ability, we find a positive and significant coefficient on *CEO Ability* indicating that skilled CEOs use more optimistic disclosure. The interaction between *CEO Ability* and *Early Years* is consistently positive and statistically significant. This means that CEOs with the highest level of ability (*CEO Ability* = 1) use more optimistic disclosure during their early years of tenure in comparison with CEOs in their middle and final year (columns 2 and 3) and their middle years of tenure (column 4). Additionally, we show that the sum of the coefficients of *CEO Ability* and its iteration with *Early Years* is positive and statistically significant. These results are consistent with H2 and H3 and suggest that high ability CEOs use optimistic disclosure strategies during their first years of tenure, and that overall, they are more optimistic.[15] Because litigation risk is associated with optimistic disclosure, a possible explanation for our findings is that low ability CEOs prefer not to run the risk that, by disclosing more optimistic information that later on unravels to suggest opportunism, they could reveal their

[14] Untabulated results show that if we control for the *Resigned* and *Retired* variables from ExecuComp and their interaction with *Final Years* our main results remain unchanged.
[15] Untabulated results show that if the dependent variable is *Tone*, the main findings do not change.

type, uncovering their real (low) skills. This is also consistent with the theoretical model of Nagar (1999) and suggests that managers' human capital influences their disclosure strategies, and that non-talented managers use different disclosures strategies than talented managers.

Regarding the control variables, *Big Bath* is negative and significant. As mentioned before, big bath accounting probably occurs when a new CEO is appointed and may lead to narrative attributions of poor performance to the departing CEO, and thus, to less optimistic disclosure. *ROA* is negative and significant possibly showing that firms with strong performance are less optimistic. Finally, *CEO Age* and *Leverage* are not statistically significant. To lose the fewest number of observations, we replace every missing variable of *CEO Age* by its mean value (57 years). We add a dummy variable called *dummy CEO Age* that equals one for every missing observation of CEO age that we have replaced; zero otherwise. This dummy absorbs any effect of this change.[16] These results do not change if we follow previous literature (Pan et al., 2015) and drop CEOs who have been less than three years in office. In this case, the variable *Early Years* would only exist for CEOs who stay in office 3 years or more.

Finally, Table 2 Panel B shows the results of our main model adding all the control variables used to construct the variable *Optimism* following Huang et al. (2014a). Our main results remain unchanged which proves that our results are not affected by any linear combination created by the controls used in their model.

[16] Results do not change if we control for externally appointment CEOs. However, we do not obtain significance for this variable. Externally appointed CEOs are those who were not part of the board of directors before being CEOs.

1.4.2. CEO Influence over 10-K Reports

Questions may arise on the degree of CEO influence over 10-Ks, as they are mandatory SEC filings subject to wide scrutiny and complex auditing processes. Although 10-Ks are not predicted to be directly written by CEOs, managers are expected to have the power to influence and alter their content. This is because CEOs not only sign them, but also participate actively in their production as they have a legal responsibility for their content. If CEOs influence 10-Ks, the tone in the turnover year (by the departing CEO) should be different to the tone in the early years of CEO tenure (by the new CEO). To analyze this assumption, we compare *Optimism* in the turnover year with average and median *Optimism* in the early years of CEOs tenure. Untabulated results show that the average *Optimism* during the early years of CEO tenure is significantly lower than the optimism in the turnover year of the previous CEO. This is consistent with our main results for the average CEO and with CEOs influencing disclosure tone, and being able to adjust firms' narratives to their preferences.

The use of firm fixed effects in our main model also provides assurance that we are capturing CEO optimism. In addition, and as an additional test to understand the links between departing and incoming CEOs, in untabulated results we repeat the main analyses of Table 2, interacting *Early Years* and *CEO Ability* with *Big Bath*. Big bath accounting is a strategy that is likely adopted by incoming CEOs, to 'clean up the balance sheet,' start afresh, and perhaps attribute any initial poor performance to the departing CEO. As such, big bath accounting strategies correspond to new CEOs, but may obscure the strategies applied by departing CEOs, if for example, the transition does not occur precisely at the fiscal year end. The interactions *Big Bath*Early Years* and *Big Bath*CEO Ability* mitigate the potential overlap in strategies. Our main results do not change.

Overall, the evidence reported in section 4 supports the view that CEOs have the incentives and ability to influence corporate disclosure tone, and that career concerns drive managerial tone in narrative disclosures. In particular, leading to greater optimism in high ability CEOs.

1.5. Robustness Checks on Optimistic Disclosure and CEO Career Concerns

1.5.1. Alternative CEO Ability Proxy

We examine if our results are robust to the use of an alternative measure of CEO ability. We repeat our analyses using the CEO talent measure of Rajgopal et al. (2006). They compute the 3-year average of the cumulative distribution function of ROA for each CEO-firm-year by industry, where higher values indicate that the CEO outperformed the industry and lower values indicate that the CEO underperformed the industry. We lose around 3,000 observations in calculating this *CEO Ability* proxy. Table 3 Panel A shows the results obtained using this alternative measure. All our results hold. In every regression, the coefficient of *Early Years* remains negative and statistically significant. The coefficient for *CEO Ability* is positive and statistically significant meaning that skilled CEOs use more optimistic disclosure in the 10-K filings. The interaction between *Early Years* and *CEO Ability* is positive and statistically significant as in our main analysis. Additionally, as in our main model, in every regression the sum of the coefficients of *CEO Ability* and its iteration with *Early Years* is positive and statistically significant. Overall, the findings are consistent with those previously reported.[17]

[17] Chang et al. (2010) develop an alternative measure of CEO ability based on relative CEO payment calculated as the ratio of the CEO's total pay to the total pay of the four other highest-paid executives in the company over the last three full fiscal years before the CEO's departure. We create this alternative measure of CEO ability and run our main models. Untabulated results show the expected signs although we lose statistical significance as sample size drops to less than 500 observations.

1.5.2. CEO Fixed Effects

Prior literature examines manager-specific characteristics to explain firms' financial reporting and disclosure choices. For example, DeJong and Ling (2013) find that manager fixed effects are related to the use of quantitative disclosure strategies. Consistently, Ge et al. (2011) report that CFOs unobservable characteristics influence firms' accounting choices, and Davis et al. (2015) find that the tone used in conference calls has an important manager-specific component. Our measure of CEO ability is not time-invariant, as CEOs may become more able in time. As an alternative specification, we repeat our main analyses adding CEO fixed effects. Table 3 Panel B shows that our results do not change, suggesting that CEO unobservable characteristics are not biasing our results and that it is CEO ability that drives the findings. Additional, untabulated, analyses show that our results are also consistent if we follow the method in Graham et al. (2012) (the AKM method), who use the method in Abowd et al. (1999), to derive managerial fixed effects both for CEOs that change and do not change firms. Thus, the AKM method allows us to disentangle firm and CEO fixed effects not only for movers but also for some non-movers, which increases the number of observations and the power of the regression.

1.5.3. Additional Controls for Earnings Management, Managerial Sentiment and Overconfidence

Ali and Zhang (2015) show that CEOs engage in income-increasing earnings management early in their tenures, they interpret their findings as indicative of opportunism. However, earnings management can be also informative (Healy and Wahlen, 1999), and possibly, used by managers to signal improved future performance and dividend changes (Subramanyam, 1996). Our findings thus far show that high ability CEOs use more optimistic disclosure at the beginning of

their tenure. We have argued that they may use optimism to signal their beliefs over the firm future outlook suggesting a complementary relationship between reporting and disclosure practices for high ability CEOs. To ensure our disclosure results are not confounded by reporting strategies, we rerun our main model and introduce the McNichols (2002)[18] measure of absolute discretionary accruals. Table 4 Panel A shows the results. All of our main inferences are retained. The coefficient for *Abnormal Accruals* is, for all models, positive and statistically significant indicating that when CEOs engage in greater earnings management, they use more optimistic disclosure, suggesting possible complementarities between these two strategies.[19]

A second potentially confounding effect relates to sentiment. Brown et al. (2012) show that managerial pro-forma earnings disclosures are influenced by sentiment. Sentiment also affects analysts' estimates (Clement et al., 2011; Hribar and McInnis, 2012) and investors' portfolio allocation decision (Cornell et al. 2014). Hribar et al. (2017) find evidence of a negative relationship between managerial sentiment and loan loss provisions in the banking sector. They argue that accrual estimation depends on managerial expectations about future realizations so that managerial sentiment (unjustified optimism) could lead to misspecification of future accruals. To ensure our results are not confounded by sentiment, we follow Hribar et al. (2017) and construct a proxy for managerial sentiment using the *Duke University/CFO Magazine Business Outlook Survey*.[20] The mean value of *Managerial Sentiment* is 66.19, in line with

[18] We use the McNichols (2002) measure of abnormal discretionary accruals following Ali and Zhang (2015). Results hold if we construct the *Abnormal Accruals* variable using the modified Jones model developed by Dechow et al. (1995).

[19] Untabulated results show that the interaction between *Abnormal Accruals* and *Early Years* and the interaction between *Abnormal Accruals and CEO Ability* are negative but not significant. Our main results do not change when we include these interactions.

[20] More information about the survey and data can be found at *http://www.cfosurvey.org/past-results-1996.html*. This survey aggregates on a quarterly basis the individual responses of CFOs in different industries. We manually collect data on the mean response, each quarter, to the question: "*Rate your optimism about the financial prospects of your own company on a scale of 0-100, with 0 being the least optimistic and 100 being the most optimistic*." This

Hribar et al. (2017). The correlation between *Managerial Sentiment* and *Tone* and *Optimism* are positive, but low (0.11 and 0.01, respectively) and only statistically significant for *Tone*. Table 4 Panel B shows that our main results do not change if we add sentiment, suggesting that *Optimism* does not reflect unjustified expectations.[21] *Managerial Sentiment* is negative but not significant.

A third confounding effect may relate with CEO overconfidence. As our dependent variable is optimism in the 10-K report, it is fair to assume that more overconfident CEOs produce more optimistic reports. To check if this is driving our results we create a proxy for CEO overconfidence following Campbell et al. (2011),[22] which follows the logic that more confident CEOs tend to hold options for a longer period, and only exercise the options that are deep in the money. Untabulated results show that in the model with all the controls included, the *CEO Overconfidence* variable is positive and statistically significant but our main results do not change. This indicates that CEO overconfidence is not driving our results.

1.5.4. Litigation Risk and Big Bath Accounting

Litigation risk, as well as the decision by newly appointed CEOs to take an accounting bath may affect optimistic disclosure tone. We have argued in prior sections that when litigation risk is high, low ability CEOs are less likely to be optimistic to avoid attracting attention. Also, we have

question is only available from 2002 onwards, significantly reducing our sample size. We calculate the mean response for the quarters of each industry and create an annual measure of managerial sentiment.

[21] The *Managerial Sentiment* variable is created with a survey conducted in different industries so there could exist a disconnection with our dependent variable which is firm-specific. We create the industry-adjusted measure of our dependent variable, *Optimism*, and re-run the main model. We find the same results and the *Managerial Sentiment* variable remains statistically insignificant. However, it is common in the literature to have firm-specific dependent variables and industry-specific independent variables (e.g., Shroff et al., 2017).

[22] Following Campbell et al. (2011) first we compute the realizable value per option dividing the estimated value of *in-the-money* unexercised exercisable by the number of unexercised exercisable options. Second, we calculate the average exercise price as stock price at the end of the fiscal year minus the realizable value per option. Then, the average percent moneyness of the options equals to the per-option realizable value divided by the average exercise price. Finally, the *CEO Overconfidence* proxy is a dummy variable that equals one when CEOs hold stock options that are more than 100% *in-the-money* and 0 otherwise. All these data are available in ExecuComp database.

argued that when CEOs take a bath, and particularly when they take a large bath that would likely require additional disclosures, they may be less optimistic.

We study these issues in Table 5. Panel A replicates our main analyses, splitting the sample according to whether there is evidence of big bath accounting, as measured following Elliot and Shaw (1988) and Haggard et al. (2015). We split the sample into three groups: (i) firms that show no evidence of big bath accounting, (ii) firms that show some evidence of big bath accounting, and (iii) firms that take a large bath. As can be readily seen, optimism is concentrated in the firms that have no evidence of big bath accounting, while the firms that take the largest baths (over 5% of lagged total assets) show the lowest optimism. This is in line with our expectations, and the descriptive evidence on Table 1 Panel B, where we show a negative correlation between the presence of high ability CEOs and big bath accounting. Untabulated descriptive evidence also indicates that large baths are on average more likely during the early years of CEO tenure (*t*-stat=8.87; *z*-stat=8.86) and in the final year of CEO tenure (*t*-stat=11.18; *z*-stat=11.14), they are also more likely when CEOs are of low ability (*t*-stat=2.05; *z*-stat=1.81). Second, in Table 5 Panel B we split the sample into high and low litigation risk firms, following Kim and Skinner (2012). We find consistent signs for all variables of interest, but both optimistic and pessimistic tone are concentrated in the firms that operate in high litigation risk industries, as expected. In particular, we find that low ability CEOs are significantly less optimistic when they operate in high litigation risk industries, consistent with our arguments. The evidence in Panel B may also suggest that absent litigation risk, signaling by high ability CEOs may be less effective.

1.5.5. Exogenous Shock to Career Concerns

We include fixed effects in our models to control for firm- and time- invariant factors. We also run a number of sensitivity analyses. To further assuage endogeneity concerns, and better establish a causal link, in this section, we identify a plausible exogenous shock to career concerns. Following Guo and Masulis (2015), we use the 2002-2003 Sarbannes-Oxley Act, NYSE and NASDAQ rules requiring board independence in a difference-in-differences (DiD) analysis. A significant number of firms had to increase the number of independent directors as a consequence of the passage of these regulations, providing a quasi-natural experimental setting, where we can identify firms that experienced an exogenous increase in independent directors (treatment firms), and also, firms that were already in compliance and did not have to modify their board composition (control firms). CEOs who experience an exogenous increase in board independence have their career concerns clocks reset to zero, i.e., they face an exogenous increase in board monitoring (e.g., Armstrong et al., 2014), and thus, in career concerns, even if they are already late in their careers. We repeat our main analyses using the following model:

$$\text{Optimism}_{it} = \beta_0 + \beta_1 T_i P_t + \beta_2 \text{CEO Ability}_{it} + \beta_3 T_i \text{CEO Ability}_{it} +$$

$$\beta_4 T_i P_t \text{CEO Ability}_{it} + \lambda \sum \text{Controls}_{it} + u_{it}, \qquad (3)$$

where T_i equals one for those firms that are noncompliant with the NYSE and NASDAQ regulation of having more than 50% of independent directors in the board in year 2001; zero otherwise. P_t is the indicator for the post-treatment period (2005 and later years); zero otherwise. The main coefficient of interest in model (3) is the DiD estimator β_1 that measures the change in optimistic disclosure tone for treated firms from before to after the treatment, as compared to the control firms. Consistent with H1, we predict a negative β_1, indicating that CEOs in treated firms

reduce optimism. Under H2, we predict a positive β_2 indicating that more able CEOs use a more optimistic tone. Finally, under H3, we expect a positive β_4 coefficient, albeit we have no exogenous variation in CEO Ability, and thus, we cannot claim causality for this interaction.

Table 6 shows the results. First, for the DiD analysis and controls (column 1) and then, we add CEO Ability (column 2) and its interactions (column 3). Finally, we add our *Early Years* and *Final Year* proxies (column 4). The DiD coefficient is negative and statistically significant throughout, consistent with H1. *CEO Ability* is positive and significant throughout, consistent with H2 and our prior findings. Finally, we find no evidence of greater positive tone in high ability CEOs, but as noted above, we have no exogenous variation in CEO ability. Overall, the results reported in this section confirm that CEOs react to career concerns by affecting disclosure tone.

1.5.6. CEO Talent as an Instrument for CEO Ability

As previously mentioned, the type of CEO hired by the board is an endogenous decision. Thus, if there exist missing variables that affect the choice of the type of CEO in terms of ability as well as their optimism during their first years of tenure, this could be biasing our results. We further assuage these concerns by using an instrumental variables model that allows us to identify the effect of CEO Ability on optimism in 10-K reports. We require that our instrument is correlated with CEO skills but not with the structural residual of firm optimism. In particular, we instrument CEO ability with *CEO Talent*, defined as annual average industry-level CEO ability (using SIC 3-digits) of the *other* CEOs operating in the same industry excluding the own firm. This variable is likely to affect 10-K optimism only through *CEO Ability* (i.e., *only-through condition*). Greater amount of high ability CEOs by industry-year likely indicates a greater talent

pool, increasing the likelihood that the ability of every CEO in the industry is high. But, *a priori*, there is no clear reason to think that the higher ability of the other CEOs in the industry will affect the level of optimism in a given firm *i*.

Table 7 provides the results. In column (1), we regress *CEO Ability* on *CEO Talent* and controls, and we show that *CEO Talent* is a strong instrument, as it is positive and statistically significant (Atanasov and Black, 2016). Column (2) shows the first stage of the instrumental variables regression when we instrument both *CEO Ability* with the variable *CEO Talent* and *Early Years*CEO Ability* with the variable *Early Years*CEO Talent*.[23] Column (3) shows the second stage (2SLS regression) where our main results remain unchanged. This is, high skilled CEOs are more optimistic at the beginning of their tenure, and low ability CEOs are less optimistic. In the final columns (4) and (5) we show the first and second stage regression results when we also add *Final Year*.[24] Our main results are retained.

We report both Cragg-Donald Wald and Wald rank F-statistics. As we have more than one endogenous regressor, we concentrate on the Cragg-Donald Wald F-statistic (Sanderson and Windmeijer, 2016). In the first regression, the Cragg-Donald Wald F-statistic (100.9) exceeds the threshold for the Stock-Yogo 10% maximum size distortion critical value of 7.03,[25] rejecting the null hypothesis of weak instruments.

1.6. Additional Analyses on Optimistic Disclosure and CEO Career Concerns

[23] Untabulated results show that in the first stage the relationship between *Early Years*CEO Ability* and *Early Years*CEO Talent* is positive and statistically significant. Consistently, the correlation between *CEO Ability* and *CEO Talent* is 0.25 (p-value<0.01), the correlation between *Early Years*CEO Ability* and *Early Years*CEO Talent* is 0.17 (p-value<0.01) and between *Final Year*CEO Ability* and *Final Year*CEO Talent* and 0.23 (p-value<0.01).
[24] Untabulated results of the first stage show that the relationship between the interactions and their instruments is positive and significant.
[25] Stock and Yogo (2005) proposed tests for weak instruments. As Stock-Yogo critical values are derived under assumptions of homoscedasticity, Baum et al. (2007) suggest that comparison between Cragg-Donald statistic and Stock-Yogo critical value must be made with caution.

1.6.1. Future Firm Performance

Our results show that high ability CEOs use more optimistic disclosure, particularly, at the beginning of their tenures. If CEOs use these strategies to signal their type to investors, optimism at the beginning of CEO tenure should be positively related to future firm performance. To provide evidence on this issue, we analyze the relationship between optimism and future earnings and cash flows. Table 8 provides the results, both with and without the full interactions. Overall, and consistent with our expectations, we find that CEO Ability has a positive and significant relationship with future firm performance (both cash flows and accruals). We also find that high ability CEOs that are optimist in their Early Years (Optimism*Early Years*CEO Ability) obtain higher future earnings and future cash flows. On average, Optimism is not associated with greater future earnings and cash flows, consistent with Huang et al. (2014a).

1.6.2. CEO Forced Turnover

Thus far, we have argued that skilled CEOs use optimistic tone to help investors and third parties assess their ability and overall performance. If this holds true, and CEOs use optimism to assuage career concerns, the probability of observing a forced CEO turnover should be negatively associated with optimistic disclosure tone. Similarly, if *CEO Ability* reflects CEO skills, highly skilled CEOs should have a lower probability of forced turnover. To provide evidence on these issues, we study the probability of forced turnover. Following Brickley et al. (1999) we focus on performance in the year before turnover. We calculate the top and bottom *Returns* and *ROA* quartiles which relate to the 'worst' and 'best' performers in the market. Our forced turnover variable equals one when the departing CEO is managing a firm in the bottom quartile of performance; zero otherwise. Table 9 shows the results where the dependent variable

is forced turnover. Results for performance measured as *Returns* are reported in columns (1) and (2) and as *ROA* in columns (3) and (4). We include industry- and year- fixed effects in every model. *Optimism* is negative and significant in all model specifications, indicating that the probability of forced turnover decreases for those CEOs who use more optimistic tone.[26] Also, high ability CEOs have a lower probability of being forcefully fired.[27] This is in line with our theoretical development and our previous findings.[28] Additionally, we find that older CEOs and big bath accounting are positively associated with CEO forced turnover, while CEOs in firms with better accounting performance (higher *ROA*) are less likely to experience forced turnover.

Overall, our findings are consistent with a decreasing probability of CEOs being forcefully dismissed when they use optimistic narratives and they are highly skilled. This helps to validate our proxies for CEO ability and optimism in 10-Ks.

1.6.3. Economic Consequences of Optimistic Disclosure

Overall, our study suggests that optimistic tone can signal CEO ability and superior future performance. However, consistent with Huang et al. (2014a) we do not find a positive relationship between optimistic disclosure tone and future firm's performance in terms of earnings or cash flows in the short-to-medium term (t+1 to t+3). In this final section, we aim to provide additional evidence on the association between optimistic tone and firm future performance. In particular, we look at future firm debt financing and investment, as well as CEO

[26] Untabulated results show that more optimistic CEOs are less likely to stay in office 3 years or less. Consistently, we also find that optimistic and high skilled CEOs have more probability of having longer tenure.
[27] Untabulated results show that this holds for our alternative CEO ability proxy based on Rajgopal et al. (2006).
[28] Untabulated results show that the triple interaction between *Optimism*, *Early Years* and *CEO Ability* is not significant under any model specification.

payment of dividends. If optimistic disclosure tone contains information about CEO ability that markets incorporate, it is fair to assume that these firms will enjoy higher market trust.

We create two sets of dummy variables: (i) *Debt Increase, CAPEX Increase* and *Dividend Increase* that equal 1 if the change in debt, capital expenditures or dividend payments, respectively, is higher than 5%; zero otherwise; and (ii) $Debt\ Increase_{t+1,t+2,t+3}$, $CAPEX\ Increase_{t+1,t+2,t+3}$, and $Dividend\ Increase_{t+1,t+2,t+3}$ which equals one if the sum of the changes in debt, capital expenditures or dividend payments, respectively, from the three periods from *t* to *t*+3 is higher than 5%; 0 otherwise. Table 10, Panels A to C show that optimistic disclosure tone is associated with greater future access to debt, more future investments, and greater dividend payments. Overall, this evidence indicates that firms that use more optimistic disclosure have better outlooks, explaining why managers use optimistic tone.

Finally, we study the reaction to optimistic earnings announcements by studying the earnings drift (Beaver, 1968; Ball and Brown, 1968).[29] We follow the work of Henry and Leone (2016) and analyze if optimistic tone is informative in terms of firms' value-weighted cumulative abnormal returns. We first compute *Unexpected Earnings* (UE), defined as actual earnings per share (EPS) minus median estimated EPS and weighted by beginning of year share price, and *CAR* which is cumulative abnormal returns from day *t*-1 to *t*+60 around the earnings announcement date in the last quarter as our data is constructed in annual basis.[30] We compare *CAR* between two firms' portfolios. The first portfolio includes firms in the highest quintile of

[29] More recently, authors such as Chen et al. (2017) provide evidence for the existence of the post earnings announcement drift by showing that the earnings drift is related with the accounting-associated component of liquidity risk. Chen et al. (2017) measure the accounting-associated component of liquidity risk with a cross-sectional regression of liquidity risk on accounting quality.

[30] Abnormal returns are calculated as raw returns minus value-weighted market return. Value-weighted market return is raw returns divided by market value.

optimistic tone, unexpected earnings and CEO ability. The second portfolio includes firms in the lowest quintile of optimistic tone, unexpected earnings and CEO ability. Then, we run regressions for each portfolio and graph the *Optimism* coefficient from this model:

$$\begin{aligned} CAR_{[-1,+1,\ldots,+60]} = {} & \beta_0 + \beta_1 \text{Optimism}_{it} + \beta_2 \Delta\text{Optimism}_{it} + \beta_4 \text{CEO Ability}_{it} \\ & + \beta_5 \text{Early Years}_{it} + \beta_6 \text{Final Year}_{it} + \beta_7 \text{CEO Age}_{it} + \beta_8 \text{Leverage}_{it} + \\ & + \beta_9 \text{Dummy CEO Age}_{it} + \beta_{10} \text{Unexpected Earnings}_{it} + \\ & + \beta_{11} \text{Lossit} + \beta_{12} \text{Size}_{it} + u_{it}, \end{aligned} \tag{4}$$

where all the regressions include fixed effects by year. We include controls from Henry and Leone (2016), where *Loss* is calculated as an indicator variable that equals one if the actual EPS is negative; 0 otherwise. We also include variables to control for CEO career concerns (*Early Years* and *Final Year*) and CEO characteristics (*CEO Abili*ty and *CEO Age*). The variable Δ*Optimism* which is *Optimism* in period *t* minus *Optimism* in period *t*-1 is included to control for changes in the level of optimistic disclosure tone that could affect our dependent variable.

Figure 2 plots the findings and provides evidence of a drift, consistent with optimistic disclosure tone containing relevant information. The relationship between optimistic disclosure and *CAR* is always more positive for firms in the high portfolio than for firms in the low portfolio. This evidence is consistent with previous literature such as Davis et al. (2015) who state that narrative tone includes information about manager-specific characteristics.

1.7. Summary and Conclusions Chapter 1

We study whether career concerns influence CEOs optimistic disclosure tone and whether more able CEOs use narrative tone differently. Our main analyses focus on the early years of CEO tenure for which management skills are largely unknown. We show that high ability CEOs use more optimistic tone, particularly, in the early years of their tenure. Our findings suggest that

talented CEOs use optimistic tone to signal their superior skills. Our evidence suggests that these high ability CEOs, aware that disclosure tone has a potential impact on markets (e.g., Frazier et al., 1984; Tetlock, 2007; Tetlock et al., 2008; Li, 2008), likely use it to affect market's assessments of their ability, as a positive assessment is likely to increase the length of their tenure and maximize their future welfare (Godfrey et al., 2003). To better infer causality, we use mandatory changes to board independence as a plausible exogenous shock to career concerns and board monitoring. Using this shock, we provide confirmatory evidence that CEOs respond to career concerns changing their narratives. We also instrument CEO Ability, obtaining comparable results. As additional confirmatory evidence, we provide evidence of positive market reactions to optimistic disclosures using cumulative abnormal returns around earnings announcements in the last quarter. We also find that more optimistic firms have greater access to future debt financing, engage in more capital investments and pay higher future dividends.

Our study has a number of implications. Tone at the top is an important issue, but addressing it in a meaningful manner requires the understanding of CEOs incentives. When reading and interpreting corporate reports, users should consider that CEO incentives related to career concerns affect the disclosure tone of the companies they manage. Our findings indicate that CEOs develop recognizable patterns in their narrative disclosures linked to their careers, and that optimistic disclosures reflect the genuine optimism of highly skilled CEOs in the early stages of their career. This optimistic tone fades as CEOs become more conservative and risk averse as their tenure increases. The understanding of these patterns is important for investors. These findings are also of interest to policy makers and highlight the importance of qualitative disclosures. Our results indicate that the understanding of both qualitative and quantitative disclosure strategies is needed to form a coherent view of the organizational reality.

1.8. Appendices Chapter 1.

Appendix 1 Variables definition Chapter 1

VARIABLES	DEFINITION	SOURCE
Optimism	Optimistic disclosure calculated as the residual of the model from Huang et al. (2014a).	COMPUSTAT, CRSP, IBES.
Tone	Disclosure tone calculated as the difference between the total number of positive and negative words divided by total number of words in each firm-year 10-K report.	Loughran and McDonald word list and *php algorithm*
Positive Words	Total number of positive words in each firm-year 10-K filing using the Loughran and McDonald dictionary.	Loughran and McDonald word list and *php algorithm*
Negative Words	Total number of negative words in each firm-year 10-K filing using the Loughran and McDonald dictionary.	Loughran and McDonald word list and *php algorithm*
Total Words	Total number of words in each firm-year 10-K filing using the Loughran and McDonald dictionary.	Loughran and McDonald word list and *php algorithm*
CEO Tenure	Number of years each CEO stays in office.	EXECUCOMP
Early Years	Dummy variable that equals one if CEOs are in their three first years of tenure and 0 otherwise.	EXECUCOMP
Final Year	Dummy variable that equals one in the year of CEO turnover and 0 otherwise.	EXECUCOMP
CEO Ability	CEO's ability measure from Demerjian et al. (2012). It is ranked to be comprised between 0 and 1.	Demerjian et al. (2012)
CEO Ability (2)	Following Rajgopal et al. (2006) we proxy for CEO talent by computing the cumulative distribution function (CDF) of ROA for each CEO-firm-year by industry and then calculate the 3-year average of the CDF rank of ROA.	Rajgopal et al. (2006) and COMPUSTAT
Returns	Contemporaneous annual stock returns calculated using CRSP monthly return data.	CRSP
ROA	Return on assets calculated as earnings before extraordinary items divided by total assets.	COMPUSTAT
Big Bath	Big bath is a dummy variable that equals one in any fiscal year-end observation for which Special Items is negative and exceeds 1% of lagged firm total assets and 0 otherwise (Elliot and Shaw, 1988).	COMPUSTAT
CEO Age	The age of the CEO. Every missing observation is replaced by the mean value of the variable (57 years old).	EXECUCOMP
dummy CEO Age	Dummy variable that equals one for every missing value of CEO Age that has been replaced by its mean value and 0 otherwise.	EXECUCOMP
Loss	Dummy variable that equals one if earnings are negative and 0 otherwise.	COMPUSTAT
Leverage	Firm's total debt divided by total assets.	COMPUSTAT

VARIABLES	DEFINITION	SOURCE
ForcedTurnRe	Dummy variable that equals one if a firm is in the bottom returns quartile in the year preceding the CEO turnover.	COMPUSTAT
ForcedTurnROA	Dummy variable that equals one if a firm is in the bottom ROA quartile in the year preceding the CEO turnover.	COMPUSTAT
Earnings	Earnings before extraordinary items scaled by lagged total assets.	COMPUSTAT
Size	Logarithm of firm market value.	COMPUSTAT
BTM	Book-to-market ratio.	
Std Returns	Standard deviation of monthly stock returns over the fiscal year.	CRSP
Std Earnings	Standard deviation of EARN calculated over the last five years, with at least three years of data required.	COMPUSTAT
Firm Age	Logarithm of 1 plus the firm age calculated from the first year the firm entered the CRSP dataset.	EXECUCOMP
Bussseg	Logarithm of 1 plus number of business segments, or 1 if the value is missing from Compustat.	COMPUSTAT
Geoseg	Logarithm of 1 plus number of geographic segments, or 1 if the value is missing from Compustat.	COMPUSTAT
Change Earnings	Difference between Earnings in period t versus period t-1 scaled by total assets.	COMPUSTAT
af	Analyst consensus forecast for one-year-ahead earnings per share scaled by stock price per share at the end of the fiscal year to control for managerial assessment about future performance.	IBES
afe	Analyst forecast error, defined as IBES earnings per share minus the median of the most recent analysts' forecasts, deflated by stock price per share at the end of the fiscal year.	IBES
Cashflow	Cash flow from operations.	COMPUSTAT
T	Indicator for the treatment which equals one for those firms that in year 2001 are noncompliant with the listing rule of having more than 50% of independent directors in the board and zero otherwise.	RISKMETRICS
P	Indicator for the post-treatment period which equals one for 2005 and later years and zero otherwise.	COMPUSTAT
Managerial Sentiment	Managerial sentiment proxy using the mean response of CFOs in the Duke University/CFO Magazine Business Outlook Survey of the following question: "*Rate your optimism about the financial prospects of your own company on a scale of 0-100, with 0 being the least optimistic and 100 being the most optimistic*."	Duke University/CFO Magazine Business Outlook Survey
CEO Talent	This is the average ability by industry (SIC 3-digits) and year of the other firms' CEOs.	Demerjian et al. (2012) and COMPUSTAT
Debt Increase	Dummy variable that equals one if the change in total debt is higher than 5% and 0 otherwise.	COMPUSTAT
CAPEX Increase	Dummy variable that equals one if the change in capital expenditures is higher than 5% and 0 otherwise.	COMPUSTAT
Dividends Increase	Dummy variable that equals one if the change in dividends payment is higher than 5% and 0 otherwise.	COMPUSTAT

Appendix 2 Disclosure tone model

	(1) Tone	(2) Tone
Earnings	0.0042***	0.0039***
	(0.001)	(0.001)
Returns	-0.0034**	-0.0035**
	(0.001)	(0.002)
Size	-0.0002***	-0.0002***
	(0.000)	(0.000)
BTM	-0.0005***	-0.0005***
	(0.000)	(0.000)
Std Returns	-0.0026***	-0.0024***
	(0.001)	(0.001)
Std Earnings	-0.0303***	-0.0302***
	(0.001)	(0.001)
Firm Age	-0.0021***	-0.0021***
	(0.000)	(0.000)
Busseg	-0.0003*	-0.0003*
	(0.000)	(0.000)
Geoseg	-0.0010***	-0.0010***
	(0.000)	(0.000)
Loss	-0.0013***	-0.0012***
	(0.000)	(0.000)
Change Earnings	-0.4258***	-0.4119***
	(0.110)	(0.111)
afe		0.0029*
		(0.002)
af		0.0001
		(0.001)
Constant	0.0039***	0.0039***
	(0.000)	(0.000)
Observations	11,169	11,169
Adj. R-sqr.	0.196	0.197

The sample comprises 11,169 observations for the period 1993-2013. All variables are defined in Appendix 1. The model is estimated using a pooled OLS regression. Standard errors (in parenthesis) are calculated using the Huber-White procedure. Standard errors are presented in parenthesis. All continuous variables have been winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10 % levels, respectively.

Appendix 3. Parsing 10-K reports

Using SEC's Electronic Data Gathering, Analysis and Retrieval (EDGAR), we download the 10-K filings corresponding to firms in our database. It is done with a customized web crawling algorithm constructed with *php* programming language. Several types of 10-K reports are downloaded: 10-K, 10-K405, 10-KSB and 10-KSB40.

A few number of filings appear empty or with little information mostly before the year 1996. We contacted SEC for information and they responded that "*not all documents filed with the Commission by public companies will be available on EDGAR. Companies were phased into EDGAR filing over a three-year period, ending May 6, 1996. As of that date, all public domestic companies were required to make their filings on EDGAR, except for filings made in paper because of a hardship exemption. Third-party filings with respect to these companies, such as tender offers and Schedules 13D, are also filed on EDGAR.* More information appears in *https://www.sec.gov/edgar/aboutedgar.htm*." We remove those filings that appear empty or with little information.

After downloading all the 10-Ks filings, we take the following steps:

1) Remove all HTML tags from each filing.
2) Exclude the cover page (the *header*) which contains the filer's name, CIK number and firm address.
3) Exclude all the tables and exhibits because these items are more likely to contain template language that is less meaningful to measure disclosure tone (Loughran and McDonald, 2011).
4) Capital letters: we do not eliminate them because the algorithm already takes it into account (with the command *ignore case*).
5) Stop words: we do not eliminate them as they should be part of the number of total words of each 10-K.
6) Punctuation: we do not eliminate it because the algorithm takes it into account. For example, '*increase. The'* is equivalent to *increase* and *the* without taking into account punctuation or capital letters. This is done through *regular expressions in php programming language.* A regular expression, also known as *regex*, is a sequence of characters that forms a search pattern. Regular expressions consist of constants and operator symbols that denote sets of strings and operations over these sets, respectively.

Appendix 4. The 25 most frequent positive and negative words

Panel A. Positive Words.				Panel B. Negative Words.			
Words	**Word Repetition**	**Percentage**	**Cumulative percentage**	**Words**	**Word Repetition**	**Percentage**	**Cumulative percentage**
BEST	19,177	2.08%	2.08%	LOSS	971,058	10.36%	10.36%
BENEFICIAL	18,986	2.06%	4.14%	LOSSES	495,717	5.29%	15.65%
EFFECTIVE	18,671	2.03%	6.17%	IMPAIRMENT	356,653	3.81%	19.46%
BENEFIT	17,302	1.88%	8.05%	CLAIMS	318,868	3.40%	22.86%
GREATER	17,095	1.86%	9.91%	AGAINST	232,077	2.48%	25.34%
IMPROVEMENTS	15,703	1.70%	11.61%	ADVERSE	224,357	2.39%	27.73%
ABLE	15,599	1.69%	13.30%	RESTRUCTURING	211,961	2.26%	29.99%
GAIN	15,296	1.66%	14.96%	RESTATED	193,492	2.06%	32.06%
GAINS	14,645	1.59%	16.55%	ADVERSELY	180,074	1.92%	33.98%
OPPORTUNITIES	14,539	1.58%	18.13%	DISCONTINUED	178,934	1.91%	35.89%
IMPROVE	14,370	1.56%	19.69%	LITIGATION	159,963	1.71%	37.60%
PROFITABILITY	13,596	1.48%	21.17%	TERMINATION	126,598	1.35%	38.95%
GOOD	13,574	1.47%	22.64%	DECLINE	116,966	1.25%	40.20%
FAVORABLE	13,565	1.47%	24.12%	CLOSING	90,111	0.96%	41.16%
IMPROVED	13,522	1.47%	25.58%	FAILURE	84,396	0.90%	42.06%
ACHIEVE	13,282	1.44%	27.03%	DAMAGES	83,207	0.89%	42.95%
SUCCESSFUL	13,258	1.44%	28.47%	VOLATILITY	81,141	0.87%	43.81%
LEADING	13,231	1.44%	29.90%	UNABLE	78,623	0.84%	44.65%
SUCCESS	13,209	1.43%	31.34%	LIMITATIONS	67,966	0.73%	45.38%
STRONG	12,792	1.39%	32.73%	COMPLAINT	67,636	0.72%	46.10%
IMPROVEMENT	12,580	1.37%	34.09%	DEFAULT	67,420	0.72%	46.82%
ENHANCE	12,354	1.34%	35.43%	CRITICAL	67,357	0.72%	47.54%
SUCCESSFULLY	12,335	1.34%	36.77%	DOUBTFUL	65,666	0.70%	48.24%
ADVANTAGE	11,850	1.29%	38.06%	FORCE	61,772	0.66%	48.90%
BETTER	11,841	1.29%	39.34%	TERMINATED	59,789	0.64%	49.53%

This Appendix summarizes the most common words found in the 10-K of sample firms, using the Loughran and McDonald (2015) dictionary.

1.9. Tables and Figures Chapter 1

Figure 1 Proportions of the top 50 most frequent words

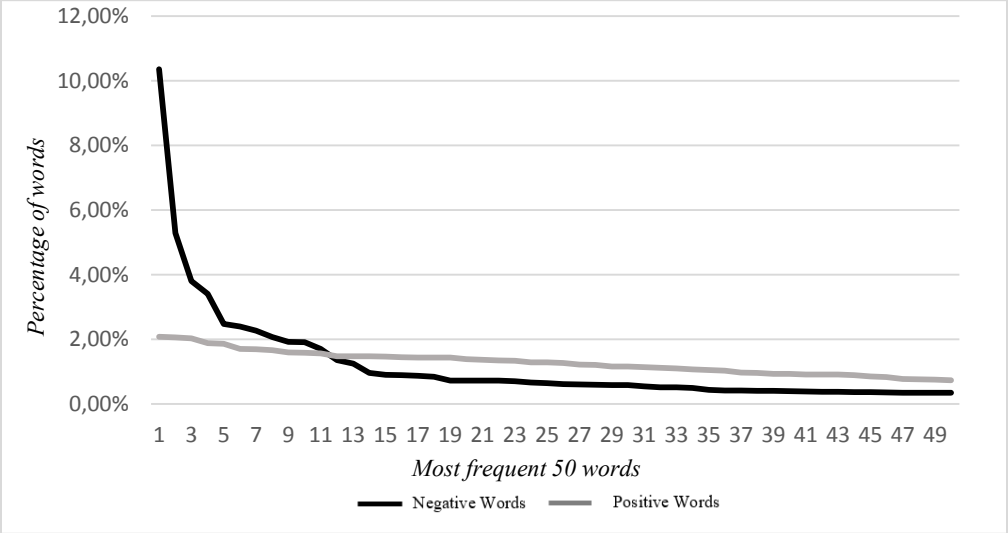


Figure 1 plots the percentages of the 50 most frequent positive and negative words in our sample using the Loughran and McDonald (2015) dictionary.

Figure 2 Post Earnings Announcement Drift – CAR and Optimistic Disclosure Tone

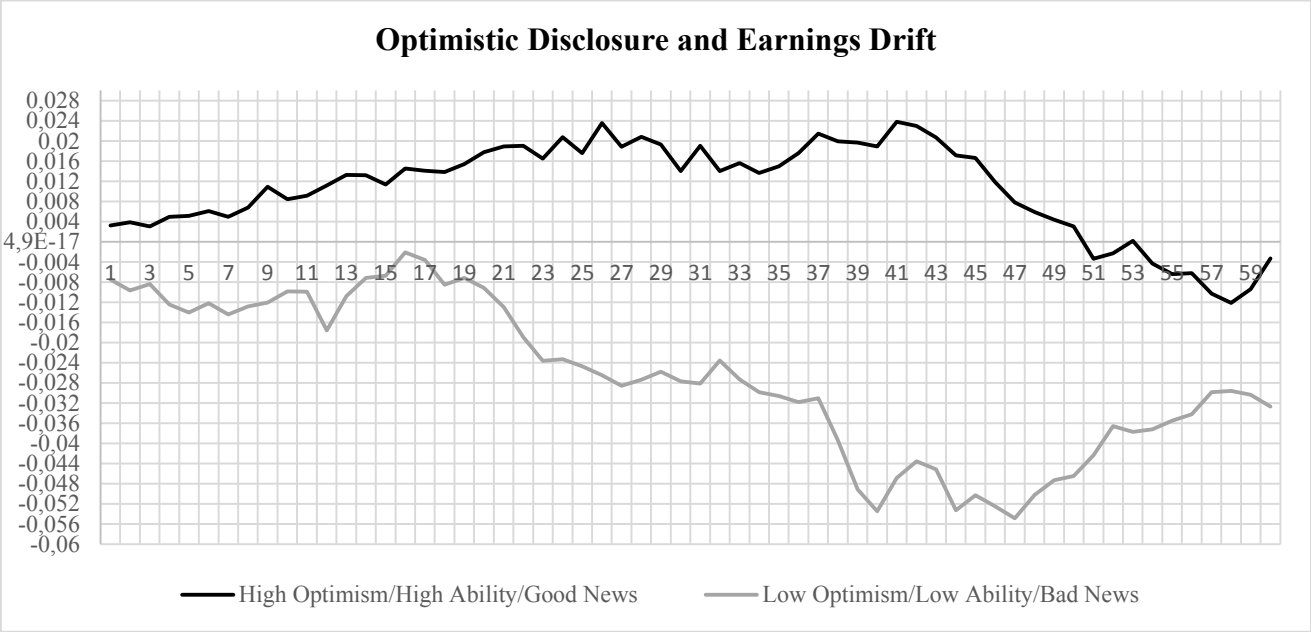


Figure 2 plots the post-earnings announcement drift for the two portfolios that include different levels of Optimistic disclosure tone, CEO ability and Unexpected Earnings.

Table 1 Descriptive statistics

PANEL A. Descriptive evidence

	N	Mean	STD	Min	Q1	Median	Q3	Max
Tone	10,941	-0.007	0.005	-0.046	-0.010	-0.006	-0.003	0.022
Optimism	10,941	0.037	0.450	-3.741	-0.219	0.061	0.324	2.607
Negative Words	10,941	460	408	0	138	367	673	4,063
Positive Words	10,941	213	162	0	87	190	300	3,098
Total Words	10,941	31,349	24,465	92	14,020	28,005	42,379	464,821
CEO Ability	10,941	0.471	0.334	0	0.222	0.444	0.778	1
CEO Ability 2	8,619	0.570	0.238	0.010	0.390	0.567	0.755	1
CEO Age	10,941	57	6.357	28	55	56	60	97
CEO Tenure	10,941	8.995	7.615	1	4	7	12	62
Early Years	10,941	0.218	0.413	0	0	0	0	1
Final Year	10,941	0.168	0.374	0	0	0	0	1
Abnormal Accruals	10,901	0.074	0.092	0.000	0.021	0.047	0.095	3.112
Managerial Sentiment	6,564	66.192	4.355	52.666	64.031	67.026	69.165	81.798
ForcedTurnRet	10,941	0.047	0.211	0	0	0	0	1
ForcedTurnROA	10,941	0.045	0.208	0	0	0	0	1
Big Bath	10,941	0.343	0.475	0	0	0	1	1
ROA	10,941	0.043	0.095	-1.254	0.019	0.047	0.084	1.247
Leverage	10,941	0.196	0.189	0	0.033	0.176	0.297	3.675

PANEL B. Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Tone		**0.848**	**-0.066**	**-0.068**	**0.064**	**0.260**	**-0.081**	**-0.141**	**0.233**	**0.038**	**0.036**
(2) Optimism	**0.843**		**-0.055**	-0.010	0.018	**0.156**	-0.022	**-0.055**	**0.070**	**0.053**	**0.053**
(3) Early Years	**-0.099**	**-0.079**		-0.011	**-0.060**	0.006	0.000	**0.044**	-0.030	0.006	-0.014
(4) Final Year	**-0.089**	-0.017	**-0.061**		-0.033	**-0.046**	-0.010	**0.081**	**-0.088**	**0.115**	0.011
(5) CEO Ability	**0.098**	**0.028**	**-0.071**	-0.024		**0.283**	**0.090**	**-0.041**	**0.422**	0.024	**-0.196**
(6) CEO Ability 2	**0.236**	**0.126**	0.012	**-0.045**	**0.278**		0.008	**-0.141**	**0.539**	**0.070**	**-0.207**
(7) Abnormal Accrual	**-0.085**	-0.007	-0.021	0.017	**0.084**	0.009		**0.115**	0.017	**-0.085**	**-0.137**
(8) Big Bath	**-0.163**	**-0.063**	**0.086**	**0.078**	**-0.034**	**-0.144**	**0.121**		**-0.285**	**-0.071**	**0.060**
(9) ROA	**0.198**	-0.025	**-0.078**	**-0.104**	**0.319**	**0.454**	**-0.139**	**-0.270**		**0.035**	**-0.329**
(10) CEO Age	0.025	**0.028**	**-0.187**	**0.126**	-0.009	**0.055**	**-0.086**	**-0.064**	**0.042**		**0.037**
(11) Leverage	-0.023	0.001	-0.010	0.007	**-0.138**	**-0.166**	**-0.077**	**0.049**	**-0.127**	**0.041**	

The sample with all the controls included comprises 10,941 firm-year observations for the period 1993-2013. All variables are defined in Appendix 1. Panel B presents the correlation matrix. It shows the Pearson (below the diagonal) and the Spearman (above the diagonal) correlation coefficients. Bold numbers indicate statistical significance at 1% level. All the continuous variables are winsorized at the 1% and 99% to mitigate the effect of outliers.

Table 2 Optimistic disclosure tone and CEOs' career concerns

PANEL A: Optimistic disclosure and career concerns					
		(1)	(2)	(3)	(4)
Early Years	β_1	-0.071***	-0.117***	-0.114***	-0.118***
		(0.013)	(0.021)	(0.022)	(0.022)
Early Years*CEO Ability	β_2		0.109***	0.103**	0.103**
			(0.036)	(0.036)	(0.036)
CEO Ability	β_3		0.072***	0.108***	0.110***
			(0.024)	(0.025)	(0.027)
Final Year	β_4				-0.024
					(0.016)
Final Year *CEO Ability	β_5				-0.013
					(0.030)
Big Bath	β_6			-0.023*	-0.022*
				(0.011)	(0.011)
ROA	β_7			-0.386***	-0.397***
				(0.050)	(0.050)
CEO Age	β_8			0.000	0.000
				(0.002)	(0.002)
dummy CEO Age	β_9			-0.035	-0.027
				(0.073)	(0.073)
Leverage	β_{10}			-0.074	-0.075
				(0.048)	(0.048)
Significance $\beta_1+\beta_2$			0.755	0.636	0.537
Significance $\beta_2+\beta_3$			0.000	0.000	0.000
Firm FE		YES	YES	YES	YES
Year FE		YES	YES	YES	YES
Observations		11,169	11,169	10,941	10,941
Adj. R-sqr.		0.557	0.559	0.562	0.563

The sample comprises 11,169 firm-year observations for the period 1993-2013. All variables are defined in Appendix 1. Models are estimated using firm and year fixed effects. Standard errors (in parenthesis) are calculated using double clustering by firm and year following Petersen (2009). All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10 % levels, respectively.

PANEL B: Optimistic disclosure and career concerns with all controls					
		(1)	(2)	(3)	(4)
Early Years	β_1	-0.071***	-0.117***	-0.109***	-0.111***
		(0.013)	(0.021)	(0.021)	(0.021)
Early Years*CEO Ability	β_2		0.109***	0.100**	0.099**
			(0.036)	(0.035)	(0.036)
CEO Ability	β_3		0.072***	0.072**	0.077**
			(0.024)	(0.027)	(0.028)
Final Year	β_4				-0.017
					(0.016)
Final Year *CEO Ability	β_5				-0.023
					(0.029)
Big Bath	β_6			-0.029**	-0.028**
				(0.011)	(0.011)
CEO Age	β_7			-0.000	-0.000
				(0.002)	(0.002)
dummy CEO Age	β_8			-0.017	-0.010
				(0.075)	(0.074)
Leverage	β_9			-0.003	-0.005
				(0.048)	(0.048)
Earnings	β_{10}			-0.602***	-0.607***
				(0.086)	(0.088)
Returns	β_{11}			-0.236	-0.239
				(0.150)	(0.150)
Size	β_{12}			0.131***	0.130***
				(0.014)	(0.014)
BTM	β_{13}			0.062***	0.062***
				(0.019)	(0.019)
Std Returns	β_{14}			0.224**	0.226**
				(0.093)	(0.094)
Std Earnings	β_{15}			0.539**	0.539**
				(0.196)	(0.196)
Firm Age	β_{16}			-0.019	-0.015
				(0.050)	(0.049)
Busseg	β_{17}			0.008	0.007
				(0.019)	(0.018)
Geoseg	β_{18}			-0.043**	-0.043**
				(0.020)	(0.020)
Loss	β_{19}			0.033*	0.034*
				(0.019)	(0.019)
Change Earnings	β_{20}			30.867***	30.633***
				(9.881)	(9.860)
afe	β_{21}			0.003	-0.002
				(0.184)	(0.183)
af	β_{22}			0.386***	0.389***
				(0.074)	(0.073)
Significance $\beta_1+\beta_2$			0.756	0.726	0.601
Significance $\beta_2+\beta_3$			0.000	0.000	0.000
Firm FE		YES	YES	YES	YES
Year FE		YES	YES	YES	YES
Observations		11,169	11,169	10,941	10,941
Adj. R-sqr.		0.554	0.557	0.576	0.576

Table 3 Optimistic disclosure tone and CEOs' career concerns: Alternative CEO Ability proxy and CEO Fixed Effects

		PANEL A: Alternative CEO Ability Proxy (Rajgopal et al. 2006)				**PANEL B: CEO Fixed Effects**			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Early Years	β_1	-0.270***	-0.522***	-0.521***	-0.524***	-0.049**	-0.089***	-0.087***	-0.087***
		(0.052)	(0.133)	(0.131)	(0.132)	(0.018)	(0.023)	(0.023)	(0.022)
Early Years*CEO Ability	β_2		0.507**	0.518**	0.520**		0.093**	0.088**	0.085**
			(0.230)	(0.227)	(0.228)		(0.039)	(0.039)	(0.038)
CEO Ability	β_3		0.178***	0.178***	0.169***		0.063**	0.111***	0.114***
			(0.020)	(0.020)	(0.023)		(0.025)	(0.026)	(0.027)
Final Year	β_4				-0.039				-0.014
					(0.031)				(0.015)
Final Year* CEO Ability	β_5				0.039				-0.023
					(0.050)				(0.027)
ROA	β_6							-0.002	-0.002
								(0.011)	(0.011)
Big Bath	β_7			-0.033***	-0.032***			-0.451***	-0.458***
				(0.010)	(0.010)			(0.056)	(0.056)
CEO Age	β_8			0.002***	0.002***			0.001	0.001
				(0.001)	(0.001)			(0.006)	(0.007)
dummy CEO Age	β_9			-0.004	-0.002			-0.079	-0.086
				(0.011)	(0.011)			(0.054)	(0.054)
Leverage	β_{10}			0.074***	0.073***			-0.050	-0.051
				(0.026)	(0.026)			(0.055)	(0.054)
Significance $\beta_1+\beta_2$			0.898	0.976	0.971		0.901	0.975	0.943
Significance $\beta_2+\beta_3$			0.003	0.002	0.002		0.001	0.000	0.000
Industry FE		YES	YES	YES	YES	NO	NO	NO	NO
Year FE		YES	YES	YES	YES	YES	YES	YES	YES
Firm & CEO FE		NO	NO	NO	NO	YES	YES	YES	YES
Observations		8,719	8,719	8,719	8,719	10,944	10,944	10,712	10,712
Adj. R-sqr.		0.115	0.124	0.127	0.127	0.588	0.590	0.593	0.593

The sample comprises 11,169 firm-year observations for the period 1993-2013 All variables are defined in Appendix 1. Panel A shows our main model results using the alternative CEO Ability measure from Rajgopal et al. (2006). This variable is described in Appendix 1 as CEO Ability (2). Models are estimated using industry (SIC 2-digits) and year fixed effects. Standard errors (in parenthesis) are calculated using the Huber-White procedure. Panel B is estimated using firm, year and CEO fixed effects. Standard errors (in parenthesis) are clustered by firm and year following Petersen (2009). All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10 % levels, respectively.

Table 4 Controls for earnings management and managerial sentiment

	PANEL A: Abnormal Accruals			PANEL B: Managerial Sentiment		
	(1)	(2)	(3)	(4)	(5)	(6)
	Optimism	Optimism	Optimism	Optimism	Optimism	Optimism
Abnormal Accruals	0.155***	0.126***	0.128***			
	(0.043)	(0.043)	(0.043)			
Managerial Sentiment				0.002	0.002	0.002
				(0.002)	(0.002)	(0.002)
Early Years	-0.118***	-0.115***	-0.119***	-0.123***	-0.127***	-0.129***
	(0.022)	(0.023)	(0.023)	(0.024)	(0.026)	(0.026)
Early Years*CEO Ability	0.118***	0.112***	0.111***	0.110**	0.098**	0.093**
	(0.038)	(0.038)	(0.038)	(0.037)	(0.038)	(0.039)
CEO Ability	0.067**	0.104***	0.106***	0.075**	0.128***	0.134***
	(0.024)	(0.026)	(0.027)	(0.031)	(0.032)	(0.035)
Final Year			-0.026			-0.033
			(0.016)			(0.037)
Final Year*CEO Ability			-0.012			-0.015
			(0.032)			(0.022)
Big Bath		-0.023*	-0.022*		-0.016	-0.018
		(0.011)	(0.011)		(0.012)	(0.012)
ROA		-0.377***	-0.387***		-0.473***	-0.483***
		(0.053)	(0.054)		(0.069)	(0.068)
CEO Age		0.000	0.000		-0.002	-0.002
		(0.002)	(0.002)		(0.002)	(0.002)
dummy CEO Age		-0.033	-0.025		0.029	0.034
		(0.072)	(0.071)		(0.106)	(0.104)
Leverage		-0.086	-0.087*		-0.083	-0.082
		(0.051)	(0.050)		(0.054)	(0.054)
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	10,882	10,660	10,660	6,526	6,433	6,433
Adj. R-sqr.	0.536	0.538	0.539	0.617	0.622	0.623

The sample in Panel A comprises 11,169 firm-year observations for the period 1993-2013. Sample in Panel B comprises 6,526 firm-year observations for the period 2002-2013 because the *Managerial Sentiment* variable is only available from 2002. All variables are defined in Appendix 1. Models are estimated using firm and year fixed effects. Standard errors (in parenthesis) are calculated using double clustering by firm and year following Petersen (2009). All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10 % levels, respectively.

Table 5 Big bath accounting and Litigation risk

PANEL A: Big Bath Accounting									
	Low Big Bath (1%<TA<5%)			High Big Bath (>5% TA)			No Big Bath		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Early Years	-0.083**	-0.083**	-0.074**	-0.140**	-0.130**	-0.131**	-0.127***	-0.124***	-0.128***
	(0.031)	(0.031)	(0.032)	(0.051)	(0.053)	(0.054)	(0.024)	(0.024)	(0.024)
CEO Ability	0.027	0.060	0.085	0.0171	0.0505	0.0569	0.058*	0.081**	0.080**
	(0.052)	(0.055)	(0.056)	(0.069)	(0.065)	(0.074)	(0.031)	(0.033)	(0.034)
Early Years*CEO Ability	0.034	0.027	0.009	0.1365	0.1262	0.1243	0.137***	0.135***	0.136***
	(0.065)	(0.065)	(0.065)	(0.122)	(0.119)	(0.123)	(0.040)	(0.040)	(0.040)
Final Year			0.073**			0.0024			-0.0420**
			(0.032)			(0.047)			(0.020)
Final Year*CEO Ability			-0.125**			-0.0242			0.004
			(0.055)			(0.113)			(0.037)
ROA		-0.355**	-0.331*		-0.265**	-0.269**		-0.313***	-0.319***
		(0.159)	(0.160)		(0.119)	(0.119)		(0.100)	(0.102)
CEO Age		-0.002	-0.002		0.002	0.002		0.001	0.001
		(0.002)	(0.002)		(0.003)	(0.003)		(0.002)	(0.002)
dummy CEO Age		-0.183	-0.226		-0.2247	-0.2249		0.017	0.025
		(0.177)	(0.183)		(0.131)	(0.131)		(0.061)	(0.063)
Leverage		0.006	0.008		0.1819	0.1813		-0.179***	-0.180***
		(0.080)	(0.079)		(0.125)	(0.125)		(0.062)	(0.062)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	2,357	2,357	2,357	818	818	818	7,069	7,069	7,069
Adj. R-sqr.	0.615	0.617	0.617	0.557	0.562	0.560	0.552	0.554	0.555

Table 5 (Continuation)

PANEL B: Litigation risk subsamples								
	High Litigation Risk				Low Litigation Risk			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Early years	-0.074***	-0.140***	-0.136***	-0.140***	-0.063**	-0.030	-0.032	-0.033
	(0.017)	(0.023)	(0.023)	(0.023)	(0.024)	(0.053)	(0.054)	(0.053)
CEO Ability		0.054	0.099***	0.103***		0.116**	0.130**	0.129**
		(0.033)	(0.034)	(0.035)		(0.047)	(0.048)	(0.047)
Early Years*CEO Ability		0.164***	0.155***	0.155***		-0.066	-0.069	-0.068
		(0.040)	(0.042)	(0.042)		(0.089)	(0.087)	(0.087)
Final Year				-0.029				-0.009
				(0.018)				(0.030)
Final Year*CEO Ability				-0.019				0.008
				(0.034)				(0.046)
Big Bath			-0.022	-0.021			-0.020	-0.020
			(0.014)	(0.014)			(0.017)	(0.017)
ROA			-0.428***	-0.442***			-0.237*	-0.239*
			(0.061)	(0.061)			(0.126)	(0.128)
CEO Age			0.000	0.001			0.001	0.001
			(0.002)	(0.002)			(0.003)	(0.003)
dummy CEO Age			-0.009	-0.001			-0.235	-0.231
			(0.070)	(0.069)			(0.238)	(0.237)
Leverage			-0.093	-0.095			-0.027	-0.027
			(0.056)	(0.056)			(0.098)	(0.097)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Observations	7,966	7,966	7,803	7,803	3,203	3,203	3,138	3,138
Adj. R-sqr.	0.538	0.542	0.546	0.547	0.596	0.598	0.600	0.599

The sample comprises 11,169 firm-year observations for the period 1993-2013. All variables are defined in Appendix 1. Panel A provides evidence splitting them sample into firms that show no evidence of big bath accounting, and those that do, we follow Elliot and Shaw (1988) and Haggard et al. (2015) and classify a low (high) bath as any fiscal year-end observation in Compustat for which Special Items (SPI) is negative and between one and five (over five) percent of lagged firm total assets. Panel B shows evidence by high and low litigation risk, we classify firms into high and low risk following the definitions of Table 2 Panel A in Kim and Skinner (2012). Models are estimated using firm and year fixed effects. Standard errors (in parenthesis) are calculated using double clustering by firm and year following Petersen (2009). All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10 % levels, respectively.

Table 6 Difference-in-differences analysis

	(1) Optimism	(2) Optimism	(3) Optimism	(4) Optimism
T*P	-0.123***	-0.119***	-0.156***	-0.155***
	(0.034)	(0.034)	(0.044)	(0.044)
CEO Ability		0.128***	0.142***	0.143***
		(0.022)	(0.026)	(0.026)
T*CEO Ability			-0.110*	-0.113**
			(0.052)	(0.053)
T*P*CEO Ability			0.0756	0.082
			(0.060)	(0.060)
Early Years				-0.049***
				(0.016)
Final Year				-0.026**
				(0.011)
Big Bath	-0.001	-0.002	-0.002	-0.001
	(0.011)	(0.010)	(0.010)	(0.010)
ROA	-0.351***	-0.466***	-0.468***	-0.476***
	(0.049)	(0.051)	(0.051)	(0.051)
CEO Age	0.003	0.002	0.002	0.002
	(0.005)	(0.005)	(0.006)	(0.006)
dummy CEO Age	-0.066	-0.071	-0.071	-0.080
	(0.050)	(0.053)	(0.050)	(0.048)
Leverage	-0.079	-0.074	-0.072	-0.075
	(0.056)	(0.055)	(0.055)	(0.055)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
CEO-firm FE	YES	YES	YES	YES
Observations	10,303	10,303	10,303	10,303
Adj. R-sqr.	0.592	0.594	0.595	0.596

The sample comprises 11,169 firm-year observations for the period 1993-2013. All variables are defined in Appendix 1. Models are estimated using firm, year and CEO-firm fixed effects. Standard errors (in parenthesis) are clustered by firm and year following Petersen (2009). All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. Column (2) shows the DiD analysis. Columns (2) and (3) show the DiD analysis incorporating *Early Years* and *CEO Tenure* as additional proxy for possibly additional CEO career concerns. ***, **, and * represent significance at the 1%, 5%, and 10 % levels, respectively.

Table 7 CEO Talent as instrument for CEO Ability

	(1) CEO Ability	(2) CEO Ability (First Stage1)	(3) Optimism (Second Stage1)	(4) CEO Ability (First Stage2)	(5) Optimism (Second Stage2)
CEO Talent	0.255***	0.271***	1.085**	0.280***	1.050**
	(0.036)	(0.038)	(0.453)	(0.040)	(0.449)
Early Years*CEO Talent		-0.083	1.063***	-0.088	1.074***
		(0.056)	(0.355)	(0.058)	(0.350)
Final Year*CEO Talent				-0.0537*	0.2943
				(0.030)	(0.321)
Early Years		-0.001	-0.068***	-0.001	-0.069***
		(0.004)	(0.017)	(0.004)	(0.017)
Final Year		0.002	-0.039***	0.003	-0.043***
		(0.002)	(0.012)	(0.003)	(0.011)
Big Bath	0.007***	0.007***	-0.027**	0.007***	-0.027**
	(0.002)	(0.002)	(0.012)	(0.002)	(0.012)
ROA	0.364***	0.364***	-0.809***	0.364***	-0.817***
	(0.029)	(0.029)	(0.177)	(0.029)	(0.177)
CEO Age	-0.000	-0.000	0.001	-0.000	0.001
	(0.001)	(0.000)	(0.002)	(0.001)	(0.002)
dummy CEO Age	-0.012	-0.012	0.038	-0.011	0.044
	(0.016)	(0.016)	(0.084)	(0.015)	(0.086)
Leverage	-0.038*	-0.038*	-0.041	-0.038*	-0.044
	(0.022)	(0.022)	(0.064)	(0.022)	(0.065)
Firm FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
Observations	9,513	9,513	9,513	9,513	9,513
Adj. R-sqr.	0.654	0.654	0.535	0.654	0.534
Wald Rank F-statistic			22.24		15.14
Cragg-Donald Wald F-statistic			100.9		66.63
Stock-Yogo critical value			7.03		N/A

The sample comprises 11,169 firm-year observations for the period 1993-2013. All variables are defined in Appendix 1. Models are estimated using firm and year fixed effects. Standard errors (in parenthesis) are clustered by firm and year following Petersen (2009). All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance levels at the 1%, 5%, and 10 % levels, respectively.

Table 8 Optimistic disclosure tone, future firm performance and future investment opportunities

PANEL A: Optimism disclosure, CEO Ability, career concerns and future performance						
	(1)	(2)	(3)	(4)	(5)	(6)
	$Earnings_{t+1}$	$Earnings_{t+2}$	$Earnings_{t+3}$	$Cashflow_{t+1}$	$Cashflow_{t+2}$	$Cashflow_{t+3}$
Optimism	0.001	0.001	-0.002	0.003	0.001	-0.002
	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
CEO Ability	0.015***	0.010***	0.009*	0.026***	0.017***	0.014**
	(0.003)	(0.004)	(0.005)	(0.005)	(0.005)	(0.006)
Early Years	-0.001	-0.001	-0.003	-0.004*	-0.005*	-0.007**
	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
Final Year	-0.009***	-0.006	-0.001	-0.002	-0.004	-0.001
	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)	(0.004)
Controls, Industry and Year FE	Included	Included	Included	Included	Included	Included
Observations	9,823	8,637	7,556	9,800	8,598	7,518
Adj. R-sq.	0.405	0.228	0.161	0.333	0.243	0.186
PANEL B: Optimism disclosure and future performance with interactions						
	$Earnings_{t+1}$	$Earnings_{t+2}$	$Earnings_{t+3}$	$Cashflow_{t+1}$	$Cashflow_{t+2}$	$Cashflow_{t+3}$
Optimism	-0.001	-0.004	-0.008*	0.003	-0.003	-0.009
	(0.003)	(0.004)	(0.005)	(0.004)	(0.005)	(0.005)
CEO Ability	0.015***	0.012***	0.009*	0.026***	0.015***	0.012**
	(0.003)	(0.004)	(0.005)	(0.005)	(0.006)	(0.006)
Early Years	0.003	0.003	0.002	0.001	-0.002	-0.003
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Final Year	-0.007	0.006	-0.010	-0.003	-0.005	-0.007
	(0.007)	(0.011)	(0.009)	(0.006)	(0.007)	(0.007)
Optimism*CEO Ability	0.003	0.006	0.007	-0.003	0.002	0.003
	(0.005)	(0.007)	(0.008)	(0.009)	(0.010)	(0.010)
Optimism*Early Years	0.005	0.007	0.008	0.006	0.010*	0.014**
	(0.004)	(0.006)	(0.006)	(0.004)	(0.005)	(0.006)
Optimism*Final Year	-0.008	0.002	0.011	-0.001	0.008	0.015**
	(0.006)	(0.007)	(0.008)	(0.006)	(0.006)	(0.006)
CEO Ability*Early Years	-0.028	-0.038*	-0.039*	-0.041*	-0.035	-0.031
	(0.022)	(0.022)	(0.021)	(0.021)	(0.024)	(0.025)
CEO Ability*Final Year	-0.004	-0.028	0.085**	-0.007	-0.014	0.004
	(0.031)	(0.050)	(0.042)	(0.031)	(0.037)	(0.035)
Optimism*Early Years*CEO Ability	0.026	0.041*	0.040*	0.041*	0.042	0.033
	(0.022)	(0.023)	(0.022)	(0.024)	(0.028)	(0.029)
Optimism*Final Year*CEO Ability	0.000	0.001	-0.095**	0.013	0.022	0.013
	(0.030)	(0.048)	(0.042)	(0.031)	(0.039)	(0.037)
Controls, Industry and Year FE	Included	Included	Included	Included	Included	Included
Observations	9,823	8,637	7,556	9,800	8,598	7,518
Adj. R-sqr.	0.405	0.229	0.162	0.334	0.243	0.187

The sample comprises 11,169 firm-year observations for the period 1993-2013. All variables are defined in Appendix 1. Models are estimated using industry and year fixed effects. The controls included are *Big Bath*, *CEO Age*, *dummy CEO Age*, *Leverage* and *Earnings*. Standard errors (in parenthesis) are calculated using clustering by firm. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10 % levels, respectively.

Table 9 Probability of forced turnover

	ForcedTurnRet		ForcedTurnROA	
	(1)	(2)	(3)	(4)
Optimism	-0.019***	-0.013**	-0.026***	-0.022***
	(0.005)	(0.005)	(0.005)	(0.005)
Early Years		-0.007		0.012*
		(0.006)		(0.006)
Early Years*Optimism		-0.025*		-0.012
		(0.013)		(0.013)
CEO Ability	-0.020**	-0.020**	-0.066***	-0.064***
	(0.008)	(0.008)	(0.007)	(0.007)
Big Bath	0.020***	0.020***	0.041***	0.041***
	(0.005)	(0.005)	(0.006)	(0.006)
ROA	-0.372***	-0.375***		
	(0.048)	(0.048)		
CEO Age	0.001**	0.001**	0.001**	0.001**
	(0.001)	(0.001)	(0.000)	(0.000)
dummy CEO Age	0.0365***	0.0366***	0.047***	0.047***
	(0.006)	(0.006)	(0.007)	(0.007)
Leverage	-0.021**	-0.022**	0.034***	0.034***
	(0.010)	(0.010)	(0.011)	(0.011)
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	11,058	11,058	11,058	11,058
Adj. R-sqr.	0.069	0.069	0.052	0.052

The sample comprises 11,169 firm-year observations for the period 1993-2013. All variables are defined in Appendix 1. Models are estimated including industry and year fixed effects. Standard errors (in parenthesis) are calculated clustering by firm and year following Petersen (2009). All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. *Forced turnover* in columns 1 and 2 is calculated using *Returns* and in columns 3 and 4 using *ROA*. ***, **, and * represent significance at the 1%, 5%, and 10 % levels, respectively.

Table 10 Optimistic Disclosure Tone and Future Debt Financing, Capital Investment and Dividend Payments

	PANEL A. Debt Financing		**PANEL B. Investment**		**PANEL C. Dividends**	
	(1) Debt Increase	(2) Debt Increase $_{t+1,t+2,t+3}$	(3) CAPEX Increase	(4) CAPEX Increase $_{t+1,t+2,t+3}$	(5) Dividends Increase	(6) Dividends Increase $_{t+1,t+2,t+3}$
Optimism	0.056***	0.059**	0.037***	0.073***	0.446***	0.390***
	(0.017)	(0.022)	(0.008)	(0.012)	(0.112)	(0.135)
CEO Ability	0.124***	0.149***	0.149***	0.172***	0.759***	0.660***
	(0.020)	(0.026)	(0.019)	(0.026)	(0.172)	(0.225)
Early Years	-0.008	-0.028	-0.037***	-0.083***	-0.283***	-0.451***
	(0.008)	(0.018)	(0.008)	(0.014)	(0.091)	(0.103)
Final Year	-0.019	-0.034	-0.040**	-0.041***	-0.074	-0.260***
	(0.020)	(0.020)	(0.016)	(0.011)	(0.078)	(0.084)
Big Bath	-0.006	-0.031*	-0.039***	-0.041***	-0.091	-0.127
	(0.015)	(0.014)	(0.009)	(0.010)	(0.075)	(0.086)
Earnings	-0.079	-0.280	0.524***	0.657***	8.238***	6.966***
	(0.082)	(0.167)	(0.070)	(0.084)	(1.153)	(1.256)
CEO Age	-0.001	-0.002	-0.001	-0.003***	0.005	-0.007
	(0.001)	(0.002)	(0.001)	(0.001)	(0.008)	(0.009)
Leverage	0.297***	0.472***	-0.004	-0.009	-0.527	-0.918**
	(0.093)	(0.120)	(0.034)	(0.050)	(0.354)	(0.464)
dummy CEO Age	-0.027	-0.042*	0.006	0.009	-0.285**	-0.331**
	(0.016)	(0.020)	(0.013)	(0.012)	(0.121)	(0.141)
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	6,431	5,043	10,941	10,892	5,818	5,458
Adj. R-sqr.	0.050	0.091	0.085	0.133	0.115	0.112

The sample comprises 11,169 firm-year observations for the period 1993-2013. All variables are defined in Appendix 1. Models are estimated using industry and year fixed effects. Standard errors (in parenthesis) are clustered by firm and year following Petersen (2009). All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10 % levels, respectively.

Chapter 2

CEO Labor Market Incentives and Accounting Quality: The Unintended Consequences of Trade Secret Regulations

2.1. Introduction

We examine how CEO labor market incentives influence financial reporting quality. In particular, we study the real and accounting consequences of a decrease in the pool of replacement CEOs. For this purpose, we develop a firm-specific, time-varying measure of CEO labor market incentives by integrating the staggered enactment of the Uniform Trade Secrets Act (UTSA, henceforth) with the pool of existing talent in each industry. Using this proxy, we study whether decreases in the pool of replacement CEOs impact on incumbent CEO entrenchment levels and its effect on financial reporting quality.

UTSA aims to protect firms' competitive advantage, by means of protecting their proprietary information, i.e. trade secrets, from rivals (Barney, 1991; Grant, 1996; Kogut and Zander, 1992). UTSA lowers uncertainty on the legal protection afforded to trade secrets, limiting information misappropriation (Samuels and Johnson, 1990). Trade secrets -commonly referred to as the *jewel crown*- (Jorda et al., 2007; Castellaneta et al., 2017), are an important source of firm risk and, if disclosed, can lead to significant impairments in competitive advantage and economic losses (Klasa et al., 2018), which have been estimated to be as high as $50 billion annually (PriceWaterhouseCooper, 2002). Given their economic relevance, it is not surprising that trade secrets litigation is on the rise both in state and federal courts (Almeling et al., 2010, 2011).

Although UTSA only pursues firms' competitive advantage protection, we argue that it impacts an important labor market institution: the pool of replacement CEOs. This is because after the enactment of UTSA firms can more easily litigate against top management team members that disclose firm trade secrets, as well as against any firm that hires these departing executives. Thus, greater trade secrets protection reduces the mobility of incumbent CEOs and of other top executives (supply side), as well as lowers the probability that they receive offers from other firms (demand side). Overall, this means that by increasing litigation risk for managers in possession of trade secrets and proprietary information, UTSA may reduce both the availability and attractiveness of labor-market opportunities (Castellaneta et al., 2017).

We expect that the effects of UTSA will be particularly pervasive on industry-level labor markets, creating frictions at the industry level. Greater trade secrets protection increases the proprietary cost of disclosure (Li et al., 2018), limits the information flows from other firms, and increases information asymmetry (Glaeser, 2018). Top executives, such as CEOs, are likely to have industry-relevant knowledge as well as privileged access to proprietary information (Andrews, 1987). Therefore, within-industry top executives form up the pool of talent from which replacement CEOs are drawn when boards of directors seek to appoint a new CEO. These managers also experience the greatest increase in litigation risk when UTSA is enacted, which becomes particularly problematic given the rise in externally appointed CEOs noted in (Murphy and Zábojník, 2007), who argue that the increasing importance of external relationships with different stakeholders means boards put more weight on external rather than internal skills.

Driven by UTSA, we predict that decreases in the pool of replacement CEOs have unintended consequences on managerial labor market characteristics and key firm outcomes. In

particular, it is likely that the talent drain increases incumbent CEO tenure and compensation, as firms have fewer options to replace them. As noted, greater trade secret protection reduces information flows and increases within-industry information asymmetry (Li et al., 2018, Glaeser, 2018). When labor market shifts increase CEO entrenchment, and managers who are not fulfilling their duties face a lower quality information environment, we expect to observe decreases in financial reporting quality, leading to poor subsequent decision-making and performance. As an alternative explanation, firms may not have incentives to hire executives with trade secrets information (demand side). This is because, under UTSA, firms can take to court both the executives with the trade secrets information as well as the firm hiring them.[31] In this situation, we would not expect to find an increase in the incumbent CEO level of entrenchment generated by a decrease in the pool of replacement CEOs.

By focusing on the labor market consequences of UTSA, this is among the first studies to evaluate the impact of labor market institutions on financial reporting quality, *ceteris paribus* other mechanisms of corporate governance. While we examine a number of different financial reporting quality metrics, prior work on entrenchment usually focuses on earnings management, with mixed theoretical views. On the one hand, the *quiet life* perspective (Bertrand and Mullainathan, 2003) would predict lower earnings management, if managers are no longer concerned with beating earnings targets. On the other hand, the *opportunistic* or *expropiation* perspective would predict that entrenched managers who operate in poor quality information environments may engage in earnings management, for example, to increase the profits from their insider-trading activities (Beneish and Vargus, 2002).

[31] For instance, in the court case *Diomed, Inc., Diomed Holdings, Inc., and Diomed Limited v. Vascular Solutions, Inc. and Nancy Arnold (2006),* the defendants are both a company and an executive.

To test our predictions and shed light on these contrasting views, we create a firm-specific, time-varying measure of the annual decrease in the pool of replacement CEOs by integrating the staggered enactment of UTSA with the existing within-industry pool of potential new CEOs (*Pool Decrease*). In particular, our proxy captures, for each firm, the annual percentage of the within-industry pool of talent that is impaired, i.e. of firms belonging to the same industry that are incorporated in states with UTSA.[32] This percentage is then multiplied by the quartile of one over the total pool of top management team members available in the industry. This measure follows the quasi-experimental shift share research designs used in previous literature (Borusyak et al., 2018). The intuition underlying *Pool Decrease* is that a firm experiences a stronger decrease in its potential pool of replacement CEOs as more firms in the same industry are incorporated in states where UTSA is enacted, particularly, when the number of individuals forming the available pool of talent is small. The use of the quasi-natural experiment provided by the staggered adoption of UTSA in 48 U.S. states and the District of Columbia, reduces endogeneity concerns as (1) firms cannot control the state of incorporation of other firms in their industry; (2) UTSA was enacted by policy-makers without considering the specific economic and political situation in each state (Png, 2017); and (3) the focus of the study is on the unintended consequences of UTSA over managerial labor markets.

We implement a difference-in-difference research design and use a large sample of U.S. firms from the period 1980 to 2016. We report two key findings. First, validating that *Pool Decrease* reflects managerial labor market frictions, the results indicate that incumbent CEOs

[32] We use the state of incorporation considering the *Internal-Affairs Doctrine* which states that firms' issues such as voting rights of shareholders, distributions of dividends or corporate property (which includes intellectual property and trade secrets) are determined in accordance with the law of the state in which the company is incorporated. More information can be found at: *https://definitions.uslegal.com/i/internal-affairs-doctrine*

have longer tenure, lower forced turnover, lower sensitivity of turnover to firm performance, and benefit from higher compensation as a consequence of the exogenous decrease in the pool of replacement CEOs. This is as expected, given that when firms have lower options to replace their incumbent CEOs, the demand for new CEOs rises above the supply, leading to an increase in prices (McConnell et al., 2017). It is also in line with (Donatiello et al., 2018) who argue that managerial compensation has increased in recent years because of the limited number of managers who are qualified (and available) to run large public companies. Second, decreases in the pool of replacement CEOs lead to lower financial reporting quality and worse narratives. This is shown to be particularly true in settings characterized by having a higher ex-ante likelihood of being in possession of trade secrets, such as in technological firms and in firms with higher competition.

In additional analyses, we also find that decreases in the pool of replacement CEOs generate lower firm efficiency and impair CEO-firm match. To proxy for firm efficiency, we use the proxy developed by Demerjian et al. (2012). To measure CEO-firm match, we regress firm efficiency on firm and CEO characteristics and an UTSA enactment indicator. Our measure of CEO-firm match are the CEO fixed effects coefficients from this regression. We also find that the subsample of low talented outsider CEOs from companies without the UTSA benefit greatly from the shock. Other additional analyses show that the talent drain leads to a deterioration in future firm performance and to over-investment, in line with the *opportunistic* view of entrenchment. These results are consistent with Ma and Pan (2017) who show that unobservable inadequacy in CEO-firm match affects firm performance and corporate policies.

We perform four robustness checks. First, we create an alternative measure of *Pool Decrease* that accounts for the ability of the individual executives affected by the passage of UTSA. This

refined measure explicitly considers the talent drain. The results obtained using this proxy confirm that impairments in the pool of talent negatively impact financial reporting quality. Second, we run the model including leads and lags of UTSA adoption by firms in the same industry and find that our main results are not anticipated by firms. This is as expected, as it is unlikely that managers engaging in trade secrets misappropriation stop because they are concerned that UTSA will be enacted. Indeed, a misappropriation occurred before UTSA enactment, cannot be prosecuted under UTSA.[33] Third, we run placebo tests where UTSA enactment is randomly assigned and find that the t-statistics from the simulated financial reporting quality regressions are normally distributed. Finally, we control for additional trade secrets protection regulations (Inevitable Disclosure Doctrine and Non-competition Agreements) and the main results remain unchanged.

Our study contributes to previous research in several aspects. We create a novel firm-specific, time-varying measure of changes in the pool of replacement CEOs by integrating the staggered enactment of the Uniform Trade Secrets Act with the pre-existing pool of talent. This allows us to provide evidence on how institutional changes in managerial labor markets affect financial reporting quality and the information environment. To the best of our knowledge, this is the first study showing that an increase in trade secrets protection impacts CEO labor markets and financial reporting quality. Previous accounting literature commonly assumes that managerial labor markets are competitive and efficient, i.e., frictionless, (e.g., Gabaix and Landier, 2008). The economic literature is interested in studying the behavior of the labor

[33] In particular, the Michigan UTSA establishes the following: *This act takes effect October 1, 1998 and does not apply to misappropriation occurring before the effective date. With respect to a continuing misappropriation that began before the effective date, this act does not apply to the continuing misappropriation that occurs after the effective date* (448 MI. Trade \& Commerce §1901-1910).}

markets (both employment and unemployment) developing mostly analytical models to understand them and their frictions and potential consequences (Rogerson et al., 2005). However, these papers normally concentrate on labor market in general, this is, including any type of employee (e.g., Mortensen and Pissarides, 1994), but we empirically analyze a friction in the managerial labor market and its consequences in terms of the incumbent CEO level of entrenchment and financial reporting quality.

In addition, our study contributes to the growing line of research studying the unexpected consequences of regulation, and add to a number of prior studies, such as, for example, Leuz et al. (2008), Autor et al. (2007) or Palia (2000).[34] Therefore, our findings are relevant for both firms and policy-makers, as we provide evidence on the unintended consequences over managerial labor markets and financial reporting quality of a set of laws introduced to boost innovation (Png, 2017) and protect firms' competitive advantage.

The remainder of the paper is structured as follows. Section 2.2 presents the hypotheses, sections 2.3 and 2.4 describe the methods, data and main results. Sections 2.5 and 2.6 present additional analyses and robustness checks and, finally, section 2.7 concludes.

2.2. Prior Research and Hypotheses Development on Managerial Labor Markets, Trade Secrets and Financial Reporting Quality

2.2.1. Labor Market Institutions: The Pool of Replacement CEOs

[34] Leuz et al. (2008) demonstrate the unintended consequences of Sarbanes-Oxley Act (SOX) on SEC deregistrations by providing evidence that after SOX a significant number of firms go dark. Autor et al. (2007) shows that mandated employment protection (measured through the wrongful-discharge US laws) reduce firms' productivity as it distorts production choices. Palia (2000) shows that more regulated industries attract worse (i.e., CEOs with lower education levels) CEOs as they can extract less benefits from their human capital skills.

A fundamental institution in managerial labor markets is the pool of replacement CEOs (e.g., Hermalin and Weisbach, 2017). This pool consists of all existing CEOs, internal and external top management team members, employees and other experts with the required skills, social networks, institutional knowledge and availability to be appointed by the board of directors as the next CEO. The pool of available talent influences, for example, the probability that incumbent executives receive competing job offers from other firms, which, in turn, influences CEO compensation (Gao et al., 2015).

Both hiring and firing a CEO are important tasks of boards of directors (Gao et al., 2017). Management and industry expertise are critical for successful executives (Donatiello et al., 2018), but the matching process necessary to successfully appoint a new executive is a risky endeavour, as it requires identifying the appropriate candidate from the talent pool. Choosing the wrong CEO may have significant consequences over firm investment, financial, and organization practices (Bertrand and Schoar, 2003), and lead to significant replacement costs. Indeed, anecdotal evidence suggests that forced CEO turnovers may lower shareholder value by approximately 112 billion dollars.[35]

When boards of directors consider hiring a new top executive (in particular, a new CEO), they face a number of dilemmas, but as noted in Jongjaroenkamol and Laux (2017) a particularly relevant one is: should they appoint an insider or an outsider? Even though internally appointed managers possess a deep knowledge of the firm and its products, supply chain, or corporate culture, increasingly, firms appoint external CEOs (see Figure 1) (Zajac, 1990; Parrino, 1997;

[35] The study by PwC's Strategy& on CEO succession planning "The cost of failed CEO succession planning" can be found at *https://www.strategyand.pwc.com/reports/cost-failed-ceo-succession-planning*

Farrell and Whidbee, 2003; Graham et al., 2018).[36] These outsiders have differential knowledge, skills and networks that are particularly valuable in firms that require a *fresh* view or structural changes. For example, Helmich (1974) and Helmich and Brown (1972) show that firms' rates of growth and organizational change after choosing a new CEO are larger when she is an outsider. The increasing importance of externally appointed CEOs links with the shareholder-rights movement beginning in the late 80's which has forced CEOs to consider stakeholders' needs. Stakeholder-relation and communicating skills are general and not firm-specific, lowering insiders' value. Murphy and Zábojník (2007) show that in environments where the supply of CEOs is relatively elastic, an increase in the importance of external managerial ability makes boards value external CEOs more which reflects on a positive impact on their compensation. A further element explaining the increasing appointment of external CEOs is the shift towards more independent boards of directors, as firms with a high percentage of outsider directors in the board are more likely to hire external CEOs (Borokhovich et al., 1996).

In response to this shift towards external appointments, top managers have become more mobile across sectors,[37] their business skills are more diverse and the percentage of CEOs who possess an MBA has raised (Schoar, 2007; Murphy and Zábojník, 2004).

But, how are these external CEOs hired? Prior literature sometimes assumes the existence of a competitive and flexible managerial labor market (i.e., frictionless). For instance, Gabaix and Landier (2008) develop an analytical and frictionless model in which the best CEOs run the largest companies. In their model, CEOs have different skills and are matched to firms in a

[36] This is consistent with findings in Friedrich (2016) who uses a European sample and shows that, in most industries, boards appoint more external CEOs.
[37] External CEOs usually demand additional compensation to offset the mid-career changing firm risk (Cadman et al., 2016).

frictionless assignment model, leading to perfect CEO-firm matches. Jenter et al. (2016) define such matches in frictionless managerial labor markets: *If there were another CEO candidate who would improve firm value net of the compensation required to hire him, he would have already been hired* (page 7). However, in practice, there are frictions that disrupt the CEO-firm match and lower shareholder value. In a seminal paper, Johnson et al. (1985) analyze fifty-three announcements of unexpected executive deaths and show evidence of negative stock price reactions that depend on executive characteristics such as age, tenure and replacement costs. These replacement costs, in turn, are associated with executives' talent and decision-making responsibilities. Johnson et al. (1985) interpret these negative reactions as evidence against the existence of a frictionless labor market, as otherwise, shareholder wealth would be independent of managerial continuation or termination because there would be perfect substitutes in the managerial labor maket.[38] Terviö (2008) argues that in a frictionless managerial labor market environment, some systemic failures and agency problems are ignored. These elements are, for example, the *skimming* compensation view of Bertrand and Mullainathan (2001) or managerial *empire-building* theories (Jensen, 1986).[39]

Against this backdrop, we analyze frictions in the managerial labor market generated by trade secrets regulation enactment. In particular, we focus on a plausible exogenous decrease in the pool of replacement CEOs driven by UTSA staggered enactment. These frictions are relevant as firms' talent pools (including both internal and external candidates) are likely to be, overall, small. For example, in a survey to board members of Fortune 250 firms, Donatiello et al., (2018) find that 73% of surveyed directors agree that fewer than 5 people (including insiders and

[38] See also, for additional evidence on unexpected CEOs deaths Worrell et al. (1986) or Salas (2010).
[39] The *skimming compensation view* argues that the increase in managerial compensation in recent years is explained by the increase in managerial entrenchment as well as by a loosening of social norms against excessive pay.

outsiders) qualify to be a good CEO of their company. In this scenario, any reductions in the pool of replacement CEOs would be dramatic for the firm.

2.2.2. The Universal Trade Secret Act

Trade secrets were in origin governed by common law (Castellaneta et al., 2017). The seminal court case *Peabody v. Norfolk* in the state of Massachusetts dates from 1868.[40] In 1979, the National Conference of Commissioners on Uniform State Laws published the Uniform Trade Secrets Act,[41] creating a legal framework that protects trade secrets and punishes their misappropriation (Samuels and Johnson, 1990).[42] Trade secrets protection is part of the corporation property which, according to the *Internal-Affairs Doctrine*, must be determined in accordance with the law of the state of incorporation. Since it was first published, UTSA was enacted in 38 states and the District of Columbia between 1981 and 1990, and in another 10 states between 1991 and 2013.[43]

UTSA has three main objectives: (1) create common definitions of trade secrets and trade secrets misappropriation; (2) create a uniform legal framework for every state; and (3) provide a uniform statute of impediments for non-contractual theories of liability based on the misappropriation of trade secrets (Lydon, 1987).

[40] Later, in 1939, the Restatement (First) of Torts (Section 757, Comment b) defines a trade secret as follows: "A trade secret may consist of any formula, pattern, device or compilation of information which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it. It may be a formula for a chemical compound, a process of manufacturing, treating or preserving materials, a pattern for a machine or other device, or a list of customers*"*.

[41] In August 1985 the National Conference of Commissioners on Uniform State Laws introduced amendments to remove technical deficiencies but maintaining the original philosophy of the Act (Lydon, 1987).

[42] Some important trade secrets court cases would be *Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470 (1974)* or *Aronson v. Quick Point Pencil Co., 99 S.Ct. 1096, 201 U.S. 1 (1979)*.

[43] Appendix 6 presents the US map of the states' adoption of UTSA and Appendix 7 shows the states that have incorporated the UTSA, the year and the statute that contains the law. By 2018, only New York has not enacted the UTSA as Massachusetts enacted it during year 2018: *https://www.bna.com/massachusetts-adopts-uniform-n73014481815/*

For a piece of information to be the subject of trade secret protection, UTSA establishes that the information must be secret, create economic value thanks to its secrecy status, it is not easily ascertainable by others, and also, that firms make reasonable efforts to protect its secrecy. Reflecting trade secrets relevance for firms, the U.S. Chamber of Commerce estimates that every year firms loose around $50 billion given proprietary information and intellectual property misappropriation (PriceWaterhouseCooper, 2002).[44]

Trade secrets misappropriation can occur without secrets being used or disclosed (Pooley, 1997), and thus, even though UTSA does not forbid or impose direct restrictions on managerial mobility, it clearly affects the probability that executives accept positions at rival companies, as it significantly increases managerial litigation risk. This is because trade secrets are key to retain the firm competitive advantage (Jorda et al., 2007; Castellaneta et al., 2017), and so their detection and protection is part of boards' fiduciary duties, as their disclosure may generate important economic losses (Klasa et al., 2018). In fact, in the case of CEO's fraudulent use of firm's trade secrets, even if the board fails to take action, shareholders can directly initiate a derivative action to legally claim what the company's board failed to defend.[45]

2.2.3. Managerial Labor Market Incentives and Financial Reporting Quality

While the objective of UTSA is to implement a framework to fight against misappropriation of trade secrets, thereby protecting firms' competitive advantage, we argue that it may affect other firm-level dimensions. For instance, Castellaneta et al., (2017) show that UTSA has a positive effect on market value in industries where skilled workers have higher mobility, and a negative

[44] Their survey also highlights that the most common types of trade secrets are related to firm's customers, strategic plans and financial information.
[45] Examples about these cases can be found at: *http://www.jerryburleson.com/minority-shareholder-rights/shareholder-derivative-actions/*

effect in industries with higher uncertainty and poor investment. We expect that a further consequence of UTSA is that it shrinks the managerial talent pool.

This contraction in the pool can be explained by three reasons. First, top management team members are likely to have the greatest information on firm trade secrets, being the better informed agents. They are, thus, also the most likely targets of litigation associated with trade secret protection.[46] This increase in litigation risk for managers is predicted to reduce their mobility (i.e., reduce the supply of managerial talent). Consistent with this view of litigation risk increase, Almeling et al. (2010, 2011) document that litigation due to trade secrets protection has become more pervasive both state and federal courts, signaling that UTSA is actively enforced.

Second, UTSA permits suing not only the employees but also the firms that misappropriate the trade secret, i.e., it impacts the demand side. While a risk-taking executive with highly valuable institutional knowledge may still be willing to accept an offer from a rival firm, competing firms would be less likely to hire managers of firms in states that have enacted UTSA, *vis-a-vis* those that have not. This lowers the relative attractiveness of these managers in labor markets and the value of their outside option. Thus, a plausible consequence is that when firms affected by UTSA want to hire new executives, they may have to offer higher wages to (on average) lower quality executives.

Finally, the labor market will be negatively impacted because trade secret protection decreases the incoming information from other companies. Glaeser (2018) and Li et al (2018)

[46] Other employees, not currently in the top management team of any firm, are unlikely to be considered by boards when looking to appoint a new CEO. The labor market for these middle managers and entry level employees could also be affected by UTSA, but these employees may have non-disclosure agreements in their contracts regardless of UTSA. This is less likely for top management team members and CEOs, who increasingly have implicit rather than explicit contracts (Gillan et al., 2009).

show that trade secret protection leads to lower disclosure of firm proprietary information and higher information asymmetry. In particular, Li et al. (2018) state that information gathering is harder to achieve when there are limitations to employees' labor market mobility. This is also consistent with the evidence in Gao et al. (2015), who show that managerial job hopping transfers information on outside option values of the remaining managerial team members.

Therefore, an unintended consequence of UTSA is that it likely affects managerial labor markets by reducing both (1) firm's options to change their incumbent CEO by an external one, and (2) executives availability and mobility. Indeed, by improving the legal framework to deal with trade secrets misappropriation, the enactment of UTSA progressively affects firms in the industry, reducing the availability and attractiveness of new labor opportunities for *all* executives in the industry. This decrease in the pool of replacement CEOs particularly affects the supply of managerial talent, draining the talent pool, with consequences for a number of firm-level outcomes.

First, the shortage of replacement CEOs is likely to increase managerial entrenchment as it becomes harder to find suitable executives to replace incumbent ones. There is evidence that confirms this view, showing that some executives are *irreplaceable* or very difficult to replace (Donatiello et al., 2018). Acharya et al. (2016) develop an analytical model in which managerial entrenchment increases because of an increase in competition for talent in the job market. This is the setting investigated in the current work, where the supply of CEOs is lower than the demand, generating greater competition for talent among firms. This is expected to have a number of consequences for labor market characteristics, such as prolonging CEO tenure, and lowering the sensitivity of CEO turnover to poor performance. In addition, because the demand for executive talent is higher than the supply, prices (i.e. wages) are likely to increase. The labor demand is

negatively sloped because a rise in wage rate reflects on firms' costs which also influences their selling prices. While the labor supply (i.e., amount of potential new CEOs) is positively sloped. Thus, the first hypothesis is formally stated as follows:

H1: *Decreases in the pool of replacement CEOs lead to increases in managerial entrenchment.*

A question of interest is how this talent pool drain impacts financial reporting quality, understood as the precision with which financial reporting reflects the real information about firm operations (Biddle et al., 2009).[47]

Under H1, we expect higher CEO entrenchment. This means that market discipline over managers likely decreases. Prior literature provides arguments and evidence of both positive and negative effects of CEO entrenchment on financial reporting quality. This prior work usually equates settings in which executives have greater power (are more entrenched) with situations where boards of directors are weak, i.e. poor monitors of managerial decision making. Against that background, more powerful executives may be associated with higher financial reporting quality, in terms of lower earnings management activities, for at least two reasons. First, they may prefer to enjoy the *quiet life* (Hicks, 1935; Bertrand and Mullainathan, 2003). This would lead to lower opportunism if entrenched managers prefer to avoid difficult decisions and costly efforts. In addition, if entrenched CEOs avoid intense monitoring and scrutiny from boards, they may become more long-term oriented, avoiding myopic decision-making and growing less

[47] This definition is consistent with the FASB Statement of Financial Accounting Concepts No. 1 of 1978 which establishes that financial reporting is to inform every investor (both present and potential) to make rational investment decisions after determining expected firms' cash flows.

concerned with short-term earnings goals.[48] This view is consistent with Di Meo et al. (2017) who show that entrenched managers engage less in earnings management to meet short-term financial reporting goals. They argue that these executives have a long-term view and are less likely to take decisions that can negatively affect firm future value.

The alternative view to the *quiet life* arguments is the *opportunistic* or *expropriation* view. Entrenched CEOs are likely to attempt to extract rents and expropriate shareholder wealth (Fama and Jensen, 1983; Shleifer and Vishny, 1997), for example, by staying in the job even if they do not have the required skills. This is likely in this setting, as decreases in the pool of talent are likely to lower CEO-firm match, increasing the likelihood of appointing CEOs that do not have the required skills. This *expropriation* view would predict that entrenched managers are willing to engage in costly earnings management to, for example, obtain outside funding to invest in pet projects or to grow the firm beyond its optimal size. A second important consideration is that the labor market friction originates from the enactment of trade secret protection regulation. The direct effect of this type of regulation is, as documented in Glaeser (2018) and Li et al. (2018), an increase in information asymmetry and a reduction in the information flows from other companies in the industry. It is then likely that CEOs may attempt to benefit from their increased power and the higher information asymmetry to extract rents and engage in sub-optimal decision-making. Then, low financial reporting quality *via* earnings management or low quality narratives becomes a useful instrument, for example, to obtain greater profitability from their insider-trading activities (Beneish and Vargus, 2002).

[48] Although not directly testing this hypothesis, the work of Faleye et al. (2011) is consistent with the view that intense board monitoring may put pressure on managers to concentrate in short-term goals instead of in long-term ones.

Therefore, the extent to which decreases in the talent pool have financial reporting quality consequences is an empirical question of interest. We test the following hypothesis:

H2: *Decreases in the pool of replacement CEOs lead to decreases in financial reporting quality.*

As noted above, prior literature usually equates managerial entrenchment with weak governance (Zhao and Chen, 2008), where managerial power *vis-a-vis* board power is endogenous (Hermalin and Weisbach, 2017). A novel element in our setting is that we focus on an exogenous change in labor markets that increases CEO power, *ceteris paribus* board characteristics. This provides a unique setting to re-examine whether increases in entrenchment impact on financial reporting quality.

2.3. Empirical Constructs on CEO Labor Market Incentives

We study the effect of a decrease in the pool of replacement CEOs on executives' labor market characteristics and financial reporting quality. In particular, we analyze how the enactment of UTSA in the state of incorporation of firms in the same industry affects incumbent CEOs level of entrenchment and firms' financial reporting quality.

To test our predictions, we run the following model:

$$Dependent\ Variable_{ijt} = \alpha_i + \alpha_t + \beta Pool\ Decrease_{ijt} + \epsilon_{ijt} \quad (1)$$

where *i* indexes firms, *j* industry, and *t* years. α_i corresponds to firm fixed effects and α_t is year fixed effects. The main variable of interest in model (1) is *Pool Decrease*. To construct *Pool Decrease*, we first measure the percentage of firms in the same industry that are incorporated in

states with the UTSA (*Percentage of firms*).[49] Second, we multiply this percentage by the quartile of one divided by the total number of top management team members in all the firms in the industry (quartile of one divided by *Talent Pool* where *Talent Pool* is *Total Firms* multiplied by *Total Executives*)[50]. *Pool Decrease* is constructed following the quasi-experimental shift share research designs (Borusyak et al., 2018). *Percentage of firms* represents the observed shock and the quartile of one divided by *Total Executives* is the shock exposure weight.[51] To construct *Total Executives*, we use ExecuComp database as it contains all the firms' executives in the top management team.[52] I use the inverse of the total number of top management team members in firms from the same industry to consider that the shock is likely higher for lower pools. That is, when 50% of top management team members belonging to a given industry are less willing to move to a firm seeking to appoint a new CEO, the effect is likely higher in pools that were originally composed of 30 people than in pools of 300 people.[53]

To test H1, as *Dependent Variable* we use *CEO Tenure*, *Forced Turnover*, *CEO Pay Slice*, *Salary*, *Bonus* and *Total Compensation*. All variables definitions can be found in Appendix 5. To test H2, we use seven proxies for financial reporting quality (*FRQ 1*, *FRQ 2*, *AQWi*, *AQ*, *Fog*, *Bog* and *Tone*). The four first are accruals quality measures and the last three are narrative disclosure measures. In particular, *FRQ 1* and *FRQ 2* are the residuals from the Dechow et al.

[49] We use SIC2 for industry classification. If we use the Fama and French 12 or 48 industry classification to construct the variable *Pool Decrease*, the main results do not change.
[50] If we use the tercile or decile of one over *Talent Pool*, most of the main results remain unchanged.
[51] More examples of papers using shift share research designs are Hornbeck and Moretti (2018) or Diamond (2016).
[52] To maximize sample size, missing data are replaced with the average number of top management team members (i.e., 6 executives).
[53] A real numerical example in our sample would be the following: Firm X belongs to the chemical industry (SIC-2 28) and is incorporated in Delaware. In year 2000, for this industry (and including firm X) there are 55.31% of companies incorporated in a state that have enacted UTSA. This company belongs to the first quartile of 1/*Talent Pool* where *Talent Pool* in year 2000 for Firm X is 2,368 people. *Pool Decrease* for firm X and year 2000 equals to 0.5531*1 = 0.5531.

(1995) and from the Jones (1991) model, respectively, adding lagged *ROA* as suggested by Kothari et al. (2005).[54] *FRQ 1* and *FRQ 2* are multiplied by minus one to reflect that higher values indicate lower financial reporting quality. Total accruals are calculated using balance sheet items to retain observations before 1987.[55] The third proxy (*AQWi*) is calculated following Biddle et al. (2009), and is the accruals quality measure proposed by Wysocki (2009). It is the ratio between the standard deviations of the residuals (from year t-5 to t-1) from the simpler to the full model. The simpler model is the regression of working capital accruals on current cash flows. The full model is the regression of working capital accruals on lagged, current and future cash flows. *AQ* is the standard deviation of the firm-level residuals from the Dechow et al. (1995) model from year t-5 to year t-1. It is calculated following Biddle et al. (2009) and multiplied by minus one so that higher values indicate lower financial reporting quality. The narrative measures are *Fog*, *Bog* and *Tone*. In particular, *Fog* is the readability measure, Fog index, elaborated by Li (2008). *Bog* is the Bog Index elaborated by Bonsall et al. (2017). This measure provides more comprehensive factors than Fog index and is calculated with a pre-programmed algorithm which avoids researcher discretion when calculating it. Finally, *Tone* is disclosure tone which is positive minus negative words scaled by total words. We use the 2014 updated version of the Loughran and McDonald (2015) word list.[56] More positive tone relates

[54] We use the signed values of the residuals because using the absolute value of discretionary accruals can bias the results increasing the likelihood of rejecting the null hypothesis of no earnings management (Hribar and Nichols, 2007).

[55] Total accruals are calculated following Dechow et al. (1995) as follows: change in total current assets - change in cash/cash equivalents - change in current liabilities + change in short-term debt included in current liabilities - depreciation and amortization expense and all scaled by lagged total assets. Using Compustat database the cashflow from operations data is available only from year 1987 and my period of study starts in 1980. This is important as UTSA was enacted for first time in 1981.

[56] We download the 10-K reports from EDGAR and count the number of positive, negative and total words using a *php* algorithm.

with lower financial reporting quality. In this line, Huang et al. (2014) who show that managers may use optimistic tone to influence investors' perceptions about firm's fundamentals.

Under H1, it is expected that β is positive (negative) when the dependent variable is *CEO Tenure* (*Forced Turnover*). This is consistent with the argument that when firms have a lower pool of replacement CEOs, incumbent CEOs become more entrenched. We also expect that β is positive when the dependent variables are *CEO Pay Slice*, *Salary*, *Bonus* or *Total Compensation* showing increases in CEO compensation when the CEO's demand is higher than the supply. This result would also be consistent with higher incumbent CEO entrenchment. The alternative view would be that firms are not willing to hire executives from firms with UTSA given their own litigation risk. Under this view, CEOs' supply would be higher than the demand and β should be negative. H1 helps us to validate that *Pool Decrease* represents a friction in the managerial labor market.

Under H2, we expect a negative and significant β showing that a decrease in the pool of replacement CEOs has a negative effect on firms' financial reporting quality. In developing H2, we also discussed the alternative view, that greater entrenchment may lead to a *quiet life* approach to financial reporting. Under that view, β should be positive or not significant.

X is a vector of firm and CEO controls. In particular, the firm controls are *Firm Size*, *ROA*, *MTB* and *Leverage*, as larger and better performing firms are likely to attract more talented CEOs (Gabaix and Landier, 2008; Terviö, 2008; Pan, 2017). As CEO characteristics we include *CEO Age* and *Outsider CEO*. Older CEOs may be more entrenched and perform differently. In this line, Li et al. (2017) show that CEOs' investment strategies are linked to their age. In addition, outsider CEOs are different from internally chosen ones as they do not possess internal

firm information and may behave differently than insider CEOs. In particular, externally appointed CEOs may have different tenure and salaries than internal ones (Cadman et al., 2016).

In the models analyzing financial reporting quality, we also control for *Early Years* as CEOs may behave differently early in their careers to construct a good reputation and be able to stay longer in the job, lowering financial reporting quality through higher accrual-based earnings management (Ali and Zhang, 2015). Finally, we also include *Cycle*, *REM*, *Audit Tenure* and *Big8* as controls. *Cycle* accounts for firms' accounting flexibility. Firms with longer operating cycles have larger accruals and longer periods for accruals to reverse so they have more room to manipulate (Zang, 2012). *REM* is added to account for the findings in Zang (2012) that managers adapt the level of accrual manipulation depending on the level of realized real earnings management. *Audit Tenure* proxies for the level of auditor scrutiny. *Big8* takes into account that firms audited by a large auditor are less likely to manage accruals. These controls are relevant when analyzing financial reporting quality as stated in Zang (2012). Finally, in a recent paper, Chen et al. (2018b) analyze the common procedure of using as dependent variable the residuals from Jones (1991) type models to study earnings management, and argue that a double step of calculating the residual and then using it as the dependent variable in a different regression may generate biased coefficients and incorrect standard errors. To account for this potential problem and obtain unbiased estimators, in untabulated results, we incorporate as controls the variables of the first-stage regression estimated to obtain the financial reporting quality measures in the second-stage regression and the main results remain unchanged.

2.4. Results on CEO Labor Market Incentives, CEO entrenchment and Accounting Quality

2.4.1. Sample and Descriptive Evidence

The sample contains firm-year observations from BoardEx database. Financial and accounting data comes from Compustat and returns from CSRP. Auditor data comes from Audit Analitics, and top management team members and CEO characteristics from ExecuComp. CEO ability and firm efficiency are made available by Demerjian et al. (2012). We drop financial (SIC2 60-69), utilities (SIC2 40-49) and public administration (SIC2 99) firms and obtain a final sample of 45,391 firm-year observations, representing 4,096 firms and 9,439 CEOs for the period 1980 to 2016.

Table 1 Panel A shows the descriptive statistics for the main variables. The mean of *Percentage of firms* is 0.42 which means that, on average, 42% of same-industry firms have incorporated UTSA. The variable *Talent Pool* is calculated as *Total Firms* (total firms in the same industry) multiplied by *Total Executives* (total number of top management team members in each company from the same industry). The talent pool has a median value of 827 executives, with a minimum of 3 and a maximum of 5,388.[57] Given that the average firm in the sample has six executives (the CEO and five top management team members, commonly including the Chief Financial Officer [CFO], the Chief Operational Officer [COO], the Chief Technology Officer [CTO], the Chief Administrative Officer [CAO], and the Chief Informational Officer [CIO]), this means that, for the average firm, there are 138 firms belonging to the same industry from which to draw talent, in addition to five insiders that could also potentially substitute the incumbent CEO.[58] *CPS* variable is CEO Pay Slice and represents the percentage that CEO payment represents over the top five best paid executives. The maximum is 3.12 which means that, for

[57] The minimum of 3 executives corresponds to the *Retail Trade* industry where there are small firms. In particular, this observation corresponds to a firm in the lowest quartile of firm size in my sample. The maximum of 5,388 executives corresponds to the *Services* industry. In particular, this corresponds to a firm which size is in the third quartile of the firm size distribution in our sample.
[58] See Menz (2012) for a review of top management team members studies.

that observation, CEO payment is more than three times bigger than the sum of the payments of the five best paid executives in the firm.

Table 1 Panel B shows that, when the percentage of firms from the same industry incorporated in UTSA states is higher than 50%, 75% or 90%, the number of CEOs appointed from the same industry is lower. This is consistent with litigation risk discouraging top managers to join companies in industries incorporated in UTSA states. This also links with UTSA lowering the mobility of executives. Untabulated results show that the CEO Ability mean when the percentage of firms is the same industry with UTSA is higher than 50%, 75% or 90% equals to 0.012, -0.063 and -0.089 respectively. When the percentage same-industry firms with UTSA is lower than 50%, 75% or 90% the CEO Ability mean equals to 0.000, 0.005 and 0.004, respectively. All the mean differences are statistically significant. We find that, on average, CEO ability decreases when the percentage of same-industry firms with UTSA is higher than 75%. In this line, we also find that the CEO ability mean (median) for firms incorporated in states that have enacted the UTSA is 0.006 (-0.018) and for firms without UTSA it equals to 0.014 (-0.003) being this difference statistically significant. Thus, the decrease in the pool of replacement CEOs reduces the likelihood that firms find a good match when looking for a CEO replacement.

Panel C shows that, overall, and consistent with Figure 1, firms increasingly hire outsider CEOs even after the passage of UTSA, although this effect disappears at the highest level of impairment in the pool of talent. This suggests that when the drain in the pool is extreme, boards search within the firm and hire their own insiders. Overall, the univariate evidence indicates that decreases in the pool of talent lead boards to seek outsider CEOs from firms that they may have not considered previously. Whilst before boards may have preferred to appoint knowledgeable

managers from the same industry, the UTSA-related pool impairment seems to limit the appointment of same-industry CEOs, as expected.

As previously discussed, the identified impairment in the pool of replacement CEOs is likely to reduce the mobility of those executives with better access to trade secrets information (i.e., the most talented). Thus, a plausible consequence is that less informed (less talented) CEOs are hired. I look at this issue in Panel D of Table 1, where we formally model the likelihood of having outsider *vs*. insider CEOs following previous literature (Murphy and Zábojník, 2004; Jongjaroenkamol and Laux, 2017), and split CEOs depending on whether they come from the same industry or not, and whether they are classified as highly talented of not, using the Demerjian et al. (2012) talent measure. If *Pool Decrease* captures a friction that reduces the mobility of highly able executives with access to trade secrets, low talented managers in unrelated industries may be indeed the "*winners*" under this law, benefiting from having greater access to top executive positions.

Panel D shows a positive and significant relationship between *Pool Decrease* and *Outsider CEO* (Column 1). This is consistent with the univariate results in Panel C, the graphical evidence in Figure 1, and the results in previous literature showing that there has been an increase in external CEO appointments during the different years. Columns 2 through 6 provide evidence by grouping CEOs depending on whether they belong to the same industry and are classified as high or low talent. There is no significant relationship between *Pool Decreases* and outsider CEOs coming from the same industry (column 2), but, as expected, there appears to be an increase in the appointment of low talented outsider CEOs (column 3) and low talented outsider CEOs coming from the same industry (column 4). Columns 5 and 6 also show a positive and statistically significant relationship between *Pool Decrease* and outsider CEOs from

different industries and low talented outsider CEOs from different industries, respectively. This evidence would suggest that boards are more likely to hire low talented CEOs after the shock.[59]

Table 2 shows the correlation matrix. The correlations between *Pool Decrease* and the variables measuring entrenchment (*CEO Tenure*, *CEO Pay Slice*, *Salary* and *Total Compensation*) are positive and statistically significant. Regarding financial reporting quality, we find that most of them have a positive correlation with *Pool Decrease* but only *AQWi* and *AQ* are statistically significant. *Bog* has a negative and significant correlation with *Pool Decrease*. The largest correlations are between *Leverage* and *MTB* (corr=0.420) and between *Firm Size* and *Big8* (corr=0.390). This is expected as *Leverage* is calculated as total debt scaled by book value of equity which would be mechanically positively correlated with market-to-book ratio, and larger firms are likely to have a Big 8 auditor. Given the size of these correlations, it is unlikely that multicollinearity is an issue in our setting (Allison, 1998).

2.4.2. Main Results

Table 3 shows the results of testing H1. We find that *Pool Decrease* leads to longer *CEO Tenure* (Panel A), and lower *Forced Turnover* (Panel B). Regarding the sensitivity of CEO turnover to changes in firm performance and following Gao et al. (2017) and Ertimur and Patrick (2018), Panel C shows that *Pool Decrease***ChangRet* is negative and statistically significant, indicating a lower sensitivity of CEO turnover to changes in firm performance after the decrease in the pool of talent. Results are robust to the use of different proxies to measure firm performance. Thus, *Pool Decrease* is associated with longer incumbent CEO tenure, lower probability of being

[59] Untabulated results show that if we create the dummy variables for outsider CEOs with high talent from the same industry we do not obtain significant results. In addition, if the dependent variable is a dummy variable that equals one if the CEO is an outsider, we find that the *Pool Decrease* coefficient is negative and significant.

forcefully fired and lower sensitivity of turnover to performance.[60] This suggests greater CEO entrenchment. In Panels B and C the coefficients on *CEO Age* and *Outsider CEO* are systematically positive. This is as expected given that boards are more likely to remove older CEOs, and also, that external CEOs are subject to greater board scrutiny because of the higher information asymmetry regarding their firm-specific skills (Palomino and Peyrache, 2013), and thus, are also more likely to be forcefully fired.

Table 3 Panel D shows the effects over CEO compensation. *Pool Decrease* positively impacts *CEO Pay Slice*. This means that incumbent CEOs of firms that experience a decrease in the pool of replacement CEOs have higher compensation with respect to the top five executives in their company. We also find a positive and significant relationship between *Pool Decrease* and *Salary*. Again, consistent with Palomino and Peyrache (2013), the coefficient of *Outsider CEO* is positive in these regressions. This is explained by outsider CEOs receiving a higher compensation than internally appointed ones, to compensate for the higher risk of greater board monitoring and greater risk of being dismissed early.

Overall, these results validate our *Pool Decrease* proxy as identifying a friction in managerial labor markets. The evidence indicates a decrease in market monitoring over incumbent CEOs, leading to greater entrenchment, as predicted under H1. Decreases in the pool of replacement CEOs appear to reduce executives' incentives to move, thereby increasing incumbent CEOs power as board struggle to find options to replace her.

In our second set of main analyses, we study whether this managerial job market friction affects firms' financial reporting and narrative disclosure quality. Table 4 shows that *Pool Decrease* has

[60] Untabulated results show that if ROA is used (instead of returns) to construct the variable *Forced Turnover*, our main results remain unchanged.

a negative and significant relationship with the four different proxies for financial reporting quality and a positive and significant relationship with *Fog*, *Bog* and *Tone*. In particular, the evidence reported systematically reveals a deterioration in the firm information environment, as all four proxies of accruals quality are negatively associated with *Pool Decrease* (see columns 1 through 4). The evidence also indicates a deterioration in the quality of firms' narratives, with the complexity of 10-K disclosures increasing after experiencing an impairment in the pool of talent (*Fog* and *Bog* are positively associated with *Pool Decrease* in columns 5 and 6, respectively), and the use of more positive tone in narratives (column 7). These results link with Lo et al. (2017) who show that firms with lower readability are more likely to manage earnings.

To better understand the effects of *Pool Decrease* over financial reporting quality, and given that we have argued that trade secret protection impairs the pool of talent, we repeat the analyses of Table 4 separately for samples where we expect this impairment to be greater: in technological firms and in firms operating in more competitive environments. Table 5 Panels A and B shows that the effects are concentrated in the subsamples of technological firms and of more competitive firms (as measured using the Herfindahl index). These are the firms that are more likely to have trade secrets, and thus, be more affected by UTSA. We construct the subsample of technological firms following Png (2017) and Hecker (1999).[61] Technological firms and those operating in more competitive industries are in constant change and are more likely to need to replace their CEOs. For our sample, the average forced turnover for high (low) technological firms is 0.060 (0.047), while the average forced turnover for high (low) competitive firms is 0.053 (0.041). These differences are statistically significant at the 1% level.

[61] We exclude SIC3 372, 376 and 381 following Brown et al. (2009).

Untabulated results also show that the effect of *Pool Decrease* is higher in the subsample of firms with lower CEO entrenchment and lower governance controls. Firms with lower CEO entrenchment are those in the lower quintiles of the E-index elaborated by Bebchuk et al. (2008). Firms with lower governance are those in the lower quintiles of the G-index created by Gompers et al. (2003). This is consistent with our results that *Pool Decrease* generates an increase in CEO entrenchment, and thus, that the most affected companies are those with lower pre-*Pool Decrease* entrenched and monitored CEOs.

Overall, the results in Tables 4 and 5 indicate that decreases in the pool of replacement CEOs leads to lower financial reporting quality, as predicted under H2. In particular, results are aligned with the *expropriating* view of entrenched CEOs as incumbent CEOs engage in activities that reduce their firm's financial reporting quality. The results reported in this section strongly suggest that impairments in the pool of replacement CEOs affect executives labor market characteristics and firms' financial reporting quality.

2.5. Additional Analyses on CEO Labor Market Incentives

2.5.1. CEO-Firm Match, Future Performance and Potential "Winners"

Thus far, the results indicate that the shock generates greater CEO entrenchment and a greater probability of hiring low talented outsider CEOs. This is suggestive of firms and boards encountering greater restrictions and limited options to replace their incumbent CEOs. Thus, we expect that talent pool impairments may (i) affect CEO-Firm match, as it is less likely that firms find a CEO that perfectly *matches* their expectations, and also, (ii) to the extent that CEOs and firms are not well matched, firm efficiency may decrease. A final related consequence is (iii) that

low ability executives may reap the benefits of this friction, being considered for CEO appointments when they would have otherwise not been short-listed for those positions.

To measure *Firm Efficiency*, we use the proxy developed by Demerjian et al. (2012).[62] Then, we create the *CEO-Firm match* variable by regressing *Firm Efficiency* on several firm and CEO characteristics. In particular, I use the variables that Demerjian et al. (2012) use to obtain their managerial ability proxy (*Firm Age*, *Firm Market Share*, *Cash Availability*, *Life Cycle*, *Operational Complexity* and *Foreign Operations*), and we also add *UTSA*, *Outsider CEO* and *CEO Age*. See Appendix 5 for all variable definitions. The coefficient on the CEO fixed effects from this regression is our proxy for *CEO-Firm match*. Manager fixed effects reflect specific CEO characteristics associated with firm strategic decisions and investment (Bertrand and Schoar, 2003). CEO-firm match has a mean of 0.025 (0.001) before (after) the decrease in the pool of replacement CEOs. Using this proxies, Table 6 shows that *Pool Decrease* has a negative and significant relationship with both current and future *CEO-Firm match* and *Firm Efficiency*, as expected.

Given this evidence on lower firm efficiency and lower CEO-Firm matches, it appears sensible that future firm performance will be lower in firms suffering from pool decreases. Table 7 confirms this view and shows that *Pool Decrease* leads to lower industry-adjusted future firm performance. We use industry-adjusted performance as there exists a momentum effect in industry components (Moskowitz and Grinblatt, 1999). In addition, industry-adjusted firm performance is free from the effect of industry-specific characteristics and only depends on firm-specific characteristics.

[62] We use the updated 2017 version of the Demerjian et al. (2012). However, the authors explicitly request to be cited by the paper of 2012.

As noted above, to the extent that the shock affects managerial labor markets, "winners" and "losers" may emerge. In essence, certain executives may be better off after the impairment in the pool of replacement CEOs, such as, for example, top manager team members in companies without the law. In particular, we are interested in the low talented ones, as boards may consider hiring them after the shock, when they would not have considered them previously. Table 8 shows the relationship between *Pool Decrease* and *CEO Tenure* and *Forced Turnover* for subsamples of plausible "winners." We create two proxies. *Winners 1* is an indicator variable that equals 1 when the outsider CEO comes from a firm without UTSA and 0 otherwise. This first dummy does not account for managerial talent. *Winners 2* is an indicator variable that equals 1 when the outsider CEO is low talented and comes from a firm without UTSA and 0 otherwise. The results show that these low talented CEOs from firms without the law benefit from the managerial job market friction. Overall, we find that these CEOs have higher tenure and lower forced turnover than other CEOs. However, these results should be interpreted with caution as the number of observations is greatly reduced due to data constraints.

2.5.2. "Expropriation" *versus* "Quiet Life" Effects: Over-investment

To provide further evidence on the "expropriation" *versus* "quiet life" consequences of CEO entrenchment, we follow Biddle et al. (2009) and investigate over-investment. CEOs who are dedicated to a quiet life would be unlikely to over-invest, as this requires effort in raising funds, taking decisions and following up on project development. Also, Biddle et al. (2009) show that firms with better financial reporting quality engage in less over-investment, as financial reporting quality acts as a disciplining mechanism. As we find that the pool of CEOs decrease generates lower financial reporting quality, this may lead to greater over-investment. We construct three measures of over-investment (*Overinv Firm*, *Overinv Year* and *Overinv Industry*). Table 9 shows

that *Pool Decrease* is related to higher over-investment. This is consistent with the idea that entrenched CEOs exploit their position to potentially engage in pet projects, trophy acquisitions or to build the firm beyond its optimal size.

2.6. Robustness Checks on CEO Labor Market Incentives

2.6.1. Pool Decrease in Terms of Managerial Ability Drain

We create an alternative pool decrease proxy called *Pool Decrease Ability* which is a firm-specific, time-varying measure that captures changes in the pool of highly able replacement CEOs, taking into account only those firms in the same industry that incorporate UTSA and have managers in the top tercile of ability, as measured by the Demerjian et al. (2012) proxy. Pool drain in terms of ability is likely to affect firms as they have less potential new CEOs with high ability in the managerial job market to replace their incumbent CEO.

Table 10 shows the results. The relationship between *Pool Decrease Ability* and financial reporting quality is statistically significant for most of the financial reporting ability measures[63]. We do not find statistical significance for *FRQ 1*, *AQWi* but their signs are negative as expected. The *Fog* coefficient is not statistically significant but is positive as expected. Untabulated results show that the results for our CEO entrenchment measures (i.e., CEO tenure, CEO forced turnover and CEO compensation) remain unchanged.[64]

2.6.2. Parallel Trends and Placebo Test

[63] If we use the alternative measure of the decrease in the pool of CEOs for the CEO entrenchment tests (i.e., CEO tenure, Forced Turnover and CEO Compensation), our main results remain unchanged.
[64] Main results both for CEO entrenchment and financial reporting quality do not vary if we use the top quartile of managerial ability to construct the alternative measure of *Pool Decrease*.

To ensure the effects are driven by the decrease in the pool of replacement CEOs and following previous research such as Bertrand and Schoar (2003) or Flammer and Kacperczyk (2016), we construct a leads and lags model. Figure 2 graphically shows (at 95% confidence level) that the main results are not anticipated by firms which is crucial for the validity of the identification strategy. This is consistent with the previous argumentation that UTSA establishes that trade secrets misappropriation previous to UTSA enactment cannot be legally pursued (448 MI. Trade & Commerce §1901-1910). Bertrand et al. (2004) show that difference in differences analyses in long time series may lead to an overestimation of t-statistics and significance levels when observations are correlated within each unit. To address this problem and following previous research such as Bertrand et al. (2004) or Guo and Masulis (2015), we run placebo tests with 5,000 repetitions where the UTSA enactment year is randomly assigned. Untabulated results show that the t-statistics from the simulated financial reporting quality regressions follow a normal distribution.

2.6.3. Extra Controls: IDD and NCAs

Beyond UTSA, the Inevitable Disclosure Doctrine (IDD, hereafter) and the inclusion of Noncompetition Agreements (NCAs, hereafter) in contracts also protect firms from trade secrets misappropriation. IDD is a doctrine and not a law as it derives from trade secret law and emerges from a number of US court decisions. Under IDD it is assumed that an employee would not be able to conduct their duties at a rival company without disclosing former firms' trade secrets, i.e., it would be *inevitable* to disclose them. Although the evidence suggests this doctrine is not always followed even in States where the precedent exists, it obviously facilitates winning court cases that involve trade secrets misappropriation allegations (Klasa et al., 2018; Li et al., 2018). In addition, Gao et al. (2018a) show that firms under IDD decrease upward earnings

management to retain employees. In addition to IDD, contracts may include NCAs. These agreements are also known as *covenants not to compete* and for example, do not allow employees to join or create a rival company. In a recent paper, Chen et al. (2018a) show that Non-compete covenants affect firms' contractual relations. In particular, the author shows that firms subject to these agreements have lower discretionary expenditures and lower future performance. These agreements are fairly common even when their enforceability appears to be generally low (Garmaise, 2011; Starr et al., 2018).

To ensure *Pool Decrease* does not capture the incidence of IDD or NCAs, we run a robustness test where we include *IDD* and *NCA* to our models. *IDD* is an indicator variable that equals one if the company is headquartered in a state with IDD by year *t* and later and zero otherwise. Appendix 8 shows the state, year and court case of IDD adoption. We use the headquarter state following previous literature and because IDD are court decisions specifically located in certain states. To account for NCAs, we follow Garmaise (2011) and construct a "Noncompetition Agreement Enforceability Index." Appendix 9 provides the details. *NCA* ranges from zero to twelve and indicates the headquarter states' agreement in noncompetition enforceability. Table 11 shows that the main results remain unchanged when *IDD* and *NCA* are included. In fact, some results are stronger and, in most cases, *IDD* and *NCA* are not significant. Untabulated results show that if we include as controls the percentage of firms in the same industry that have enacted the IDD and have noncompetition agreements the results for labor market effects also remain unchanged.

2.7. Summary and Conclusions Chapter 2

We show that a decrease in the pool of replacement CEOs introduces frictions in managerial labor markets and affects financial reporting quality. In particular, we show that the decrease in the pool of replacement CEOs increases the incumbent CEO entrenchment and lowers financial reporting and narrative disclosure quality. We also show that this pool decrease relates with lower CEO-firm match, lower firm efficiency, worse future firm performance and higher over-investment decisions. The results are robust to the use of alternative measures for the decrease in the pool of replacement CEOs, the lead and lags model and to the inclusion of alternative trade secrets protection controls.

This study has important implications for companies, investors and regulators. First, this is the first paper analysing a shock to the managerial labor market that generates a friction through the pool of replacement CEOs decrease. We show that the pool of replacement CEOs is relevant for firms and that its deterioration has undesired effects in companies. Second, it contributes to the literature of unintended regulations effects (e.g., Leuz et al., 2008). UTSA appears to protect firms competitive advantage through trade secrets misappropriation protection. However, we show that this has unexpected and negative effects on firms through a decrease in the pool of replacement CEOs.

2.8. Appendices Chapter 2

Appendix 5 Variables definition Chapter 2

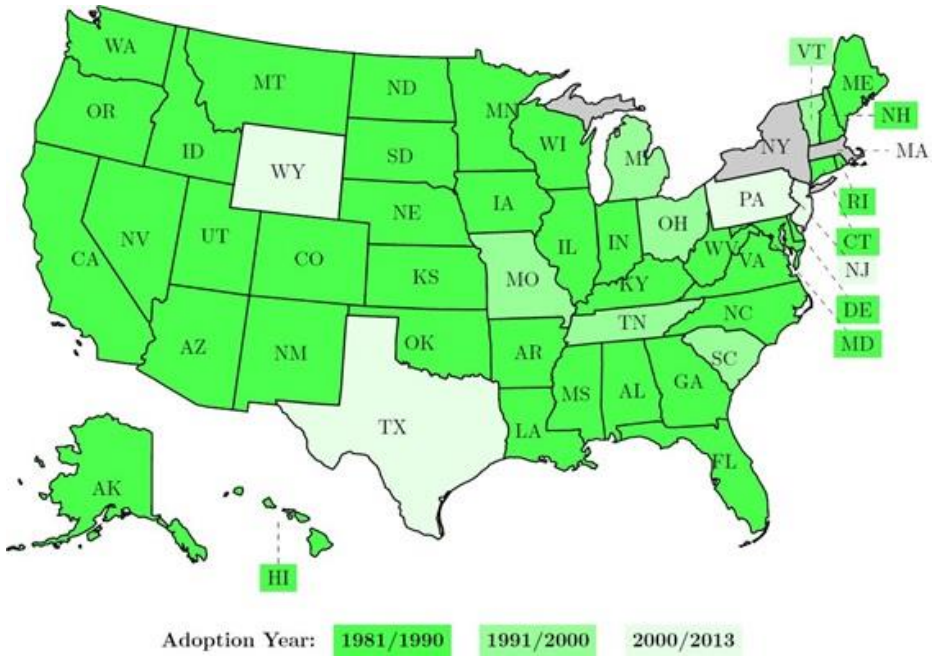
VARIABLES	DEFINITION	SOURCE
Pool Decrease	It it's the percentage of firms by industry-year incorporated in states that have enacted the UTSA (*Percentage of firms*) multiplied by the quartile of one over the total number of top management team members in the industy (*Talent Pool*).	COMPUSTAT, UTSA, ExecuComp and BoardEx
CEO Tenure	Number of years the CEO has been in office.	BoardEx
Aggregated Tenure	Aggregated CEO tenure in period t+1, t+2 and t+3.	BoardEx
Forced Turnover	Indicator variable that equals 1 if a firm is in the bottom returns quartile in the year preceding the CEO turnover.	BoardEX and CRSP
Aggregated Forced Turnover	Aggregated *Forced Turnover* in period t+1, t+2 and t+3.	BoardEX and CRSP
CEO Pay Slice	Percentage that the total CEO compensation represents over the compensation of the top five executives in the company.	ExecuComp
Salary	CEOs' salary.	ExecuComp
Bonus	CEOs' bonus.	ExecuComp
Total Compensation	Natural logarithm of salary, bonus, other annual, total value of restricted stock granted, total value of stock options granted (using Black-Scholes), long-term incentive payouts and all other total.	ExecuComp
FRQ 1	Abnormal discretionary accruals following Dechow et al. (1995). It is multiplied by minus one which indicates that higher values of the measure relate with lower financial reporting quality.	COMPUSTAT
FRQ 2	Abnormal discretionary accruals following Jones (1991) and controlling by lagged ROA as suggested by Kothari et al. (2005). It is multiplied by minus one which indicates that higher values of the measure relate with lower financial reporting quality.	COMPUSTAT
AQWi	Modified version for the accruals quality measure as proposed by Wysocki (2009). It is the ratio between the standard deviations of the residuals (from year t-5 to t-1) from the simpler to the full model. The simpler model is the regression of working capital accruals on current cash flows. The full model is the regression of working capital accruals on lagged, current and future cash flows.	COMPUSTAT
AQ	It is the standard deviation of the firm-level residuals from the Dechow et al. (1995) model from year t-5 to year t-1. It is multiplied by minus one which indicates that higher values of the measure relate with lower financial reporting quality.	COMPUSTAT
Fog	Fog index which is a financial statement readability measure.	Li (2008)
Bog	Bog index which is a financial statement readability measure.	Bonsall et al. (2017)
Tone	Disclosure tone calculated as the difference between the total number of positive and negative words divided by total number of words in each firm-year 10-K report.	Loughran and McDonald word list and *php algorithm*.

VARIABLES	DEFINITION	SOURCE
Percentage of firms	Percentage of firms by industry-year incorporated in states that have enacted the UTSA.	COMPUSTAT, UTSA and BoardEx
Talent Pool	Total number of top management team members in each industry and year.	BoardEx and ExecuComp
Total firms	Total number of firms in each industry.	BoardEx
Total Executives	Total number of top management team members in each firm.	ExecuComp
Returns	Contemporaneous annual stock returns calculated using CRSP monthly return data.	CRSP
CEO-firm match	It is the coefficient of the CEO fixed effects in a model in which I regress the firm efficiency measure from Demerjian et al. (2012) on several firm and CEO characteristics.	COMPUSTAT, BoardEx and Demerjian et al. (2012)
Firm Efficiency	Firm efficiency measure from Demerjian et al. (2012).	Demerjian et al. (2012)
Firm Size	Natural logarithm of firm's total assets.	COMPUSTAT
ROA	Firm's return on assets calculated as income before extraordinary items scaled by total assets.	COMPUSTAT
Low Manipulation	It is a variable that accounts for accrual-based firm's manipulation. It is the abnormal discretionary accruals measure following Dechow et al. (1995).	COMPUSTAT
Winners 1	Indicator variable that equals 1 when the outsider CEO comes from a firm without UTSA and 0 otherwise.	BoardEx
Winners 2	Indicator variable that equals 1 when the outsider CEO's managerial ability is lower than the sample median and comes from a firm without UTSA and 0 otherwise.	BoardEx
ChangRet	Change in Returns from period t-1 to t.	CRSP
AdjRet	Industry-adjusted returns. It is calculated subtracting the industry-year average returns from each return observation.	CRSP
ChangAdjRet	Change in industry-adjusted returns from period t-1 to t.	CRSP
AdjROA	Industry-adjusted ROA. It is calculated subtracting the industry-year average ROA from each ROA observation.	COMPUSTAT
MTB	Market-to-book ratio. Firm's market value divided by book value of equity.	COMPUSTAT
Leverage	Firm's leverage calculated as total long term and current liabilities scaled by book value of equity.	COMPUSTAT
CEO Age	It is the age of the CEO. For regressions it is calculated as the natural logarithm of CEO age.	BoardEx
Outsider CEO	CEOs' external appointment. Indicator variable that equals 1 when the incoming CEO is an outsider.	BoardEx
Outsider Same Industry	Indicator variable that equals 1 if the CEO is an outsider who comes from the same industry and 0 otherwise.	BoardEx
Outsider Low Talent	Indicator variable that equals 1 if the CEO is an outsider and is below the CEO ability median and 0 otherwise.	BoardEx and Demerjian et al. (2012)

VARIABLES	DEFINITION	SOURCE
Outsider Low Talent	Indicator variable that equals 1 if the CEO is an outsider who is below the CEO ability median and comes from the same industry and 0 otherwise.	BoardEx and Demerjian et al. (2012)
Outsider Low Talent Same Industry	Indicator variable that equals 1 if the CEO is an outsider who is below the CEO ability median and comes from the same industry and 0 otherwise.	BoardEx and Demerjian et al. (2012)
Outsider Diff Industry	Indicator variable that equals 1 if the CEO is an outsider who comes from a different industry and 0 otherwise.	BoardEx
Outsider Low Talent Diff Industry	Indicator variable that equals 1 if the CEO is an outsider below the CEO ability median and comes from a different industry and 0 otherwise.	BoardEx and Demerjian et al. (2012)
Early Years	Indicator variable that equals 1 if the CEO is in the first three years of tenure and 0 otherwise.	BoardEx
Cycle	Firm's operating cycle. It is calculated as the days receivable plus the days inventory subtracting the days payable at the beginning of the year following Dechow (1994 and Zang (2012).	COMPUSTAT
REM	Real earnings management proxy calculated as abnormal production minus abnormal discretionary expenses following Zang (2012). Abnormal production and abnormal discretionary expenses are calculated following Roychowdhury (2006).	COMPUSTAT
Audit Tenure	Proxy for auditor scrutiny calculated as an indicator variable that equals 1 if the number of years the auditor has been auditing the firm is greater than the median in the sample of eight years and 0 otherwise.	Audit Analytics
Big8	Indicator variable that equals 1 if a firm's auditor belongs to one of the Big 8 (or Big 6, Big 5, Big 4 in the recent years) and 0 otherwise.	Audit Analytics
Pool Decrease 50	Indicator variable that equals 1 when the variable *Percentage of firms* is equal or higher than 0.5 and 0 otherwise.	COMPUSTAT, UTSA
Pool Decrease 75	Indicator variable that equals 1 when the variable *Percentage of firms* is equal or higher than 0.75 and 0 otherwise.	COMPUSTAT, UTSA
Pool Decrease 90	Indicator variable that equals 1 when the variable *Percentage of firms* is equal or higher than 0.9 and 0 otherwise.	COMPUSTAT, UTSA
UTSA	Indicator variable that equals 1 when a firm is incorporated in a state that has enacted the Uniform Trade Secrets Act and 0 otherwise.	COMPUSTAT
Investment	This is calculated as follows: (research and development expenditure + capital expenditure + acquisition expenditure - cash receipts from sale of property, plant and equipment) * 100. This is scaled by lagged total assets.	COMPUSTAT
Capex	This is calculated as (capital expenditures*100)/lagged property, plant and equipment.	COMPUSTAT
Non-capex	This is calculated as follows: (research and development expenditure + acquisition expenditure)*100 and everything scaled by lagged total assets.	COMPUSTAT

VARIABLES	DEFINITION	SOURCE
Overinv Firm	Ranked value based on the ranked deciles of cash and leverage. Leverage is multiplied by -1 before ranking for both variables to have a positive relationship with the likelihood of over-investment.	COMPUSTAT
Overinv Year	For each year, I regress the average of Investment, Capex and Non-Capex on sales growth. I calculate the deciles of the residual of the model and rank it to vary from 0 to 1.	COMPUSTAT
Overinv Industry	For each industry-year, I regress the average of Investment, Capex and Non-Capex on industry-year sales growth. I calculate the deciles of the residual of the model and rank it to vary from 0 to 1.	COMPUSTAT
Pool Decrease Ability	It it's the percentage of firms by industry-year incorporated in states that have enacted the UTSA (*Percentage of firms*) that are part of industries in the top tercile of managerial ability multiplied by the quartile of one over the total number of top management team members in the industy (*Talent Pool*).	COMPUSTAT, UTSA, ExecuComp and BoardEx and Demerjian et al. (2012)
IDD	Indicator variable that equals 1 if the company is headquartered in a state that has passed the Inevitable Disclosure Doctrine by year t and later and 0 otherwise.	COMPUSTAT and Klasa et al. (2018)
NCA	It is the Noncompetition Agreement Enforceability Index. It ranges from 0 to 12 and indicates the headquarter states' agreement in noncompetition enforceability.	COMPUSTAT and Garmaise (2011)

Appendix 6. Uniform Trade Secrets Act Map



The map shows the different states that have adopted the UTSA from 1981 to 2013. The specific year of adoption for each US state and the statute can be found in Appendix 7.

Appendix 7. Uniform Trade Secrets Act

State	Year	Statute
Alabama	1987	27 AL. COMMERCIAL LAW & CONSUMER PROTECTION § 8.27.1-8.27.
Alaska	1988	45.50 AK. COMPETITIVE PRACTICES & REGULATION OF COMPETITION 45.50.910-45.50.945
Arizona	1990	44 AZ. UNIFORM TRADE SECRETS ACT 44.401-44.407
Arkansas	1981	75 AR. UNFAIR PRACTICES 4.75.601-4.75.607
California	1985	5 CA. UNIFORM TRADE SECRETS ACT 3426.1-3426.11
Colorado	1986	74 CO. UNIFORM TRADE SECRETS ACT 7.74.101-7.74.110
Connecticut	1983	625 CT. UNIFORM TRADE SECRETS ACT 35.50-35.58
Delaware	1982	20 DE. TRADE SECRETS 2001-2009
District of Columbia	1989	4 DC. TRADE SECRETS 36.401-36.410
Florida	1988	688 FL. UNIFORM TRADE SECRETS ACT 688.001-688.009
Georgia	1990	1 GA. SELLING & OTHER TRADE PRACTICES 10.1.760-10.1.767
Hawaii	1989	26 HI. TRADE REGULATION & PRACTICE 482B.1-482B.9
Idaho	1981	8 ID. IDAHO TRADE SECRETS ACT 48.801-48.803
Illinois	1988	140 IL. ILLINOIS TRADE SECRETS ACT 765.351-765.359
Indiana	1982	3 IN. TRADE SECRETS 24.2.3.1-24.2.3.1.8
Iowa	1990	550 IA. TRADE SECRETS 550.1-550.8
Kansas	1981	60 KS. KANSAS UNIFORM TRADE SECRETS ACT 60.3320-60.3330
Kentucky	1990	365 KY. UNIFORM TRADE SECRETS ACT 880-900
Louisiana	1981	13A LA. UNIFORM TRADE SECRETS ACT 51.1431-51.1439
Maine	1987	302 ME. UNIFORM TRADE SECRETS ACT 1541-1548
Maryland	1989	11 MD. TRADE REGULATION 11.1201-11.1209
Massachusetts (*)	Not Enacted	-
Michigan	1998	445 MI. TRADE & COMMERCE 445.1901-445.1910
Minnesota	1981	325C MN. UNIFORM TRADE SECRETS ACT 325C.01-325C.08
Mississippi	1990	26 MS. MISSISSIPPI UNIFORM TRADE SECRETS ACT 75.26.1-75.26.19
Missouri	1995	417 MO. TRADEMARKS, NAMES AND PRIVATE EMBLEMS 417.450-417.467
Montana	1985	14 MT. UNFAIR TRADE PRACTICES & CONSUMER PROTECTION 30.14.401-30.14.409
Nebraska	1988	87 NE. TRADE PRACTICES 87.501-87.507
Nevada	1987	600A NV. TRADE SECRETS (UNIFORM ACT) 600A.010-600A.100
New Hampshire	1990	350B NH. UNIFORM TRADE SECRETS ACT 350B.1-350B.9
New Jersey	2012	161 NJ. NEW JERSEY TRADE SECRETS ACT 1-10
New Mexico	1989	57 NM. TRADE PRACTICES & REGULATIONS 57.3A.1-57.3A.7
New York	Not Enacted	-
North Carolina	1981	66 NC. COMMERCE & BUSINESS 66.152-66.162
North Dakota	1983	47.25.1 ND. TRADE SECRETS 47.25.1.01-47.25.1.08
Ohio	1994	1333 OH. TRADE PRACTICES 1333.61-1333.69
Oklahoma	1986	78 OK. TADEMARKS & LABELS 85-95
Oregon	1988	646 OR. TRADE PRACTICES & ANTITRUST REGULATION 646.461- 646.475
Pennsylvania	2004	12 PA. COMMERCE & TRADE 5301-5308
Rhode Island	1986	6.41 RI. UNIFORM TRADE SECRETS ACT 6.41.1-6.41.11
South Carolina	1992	8 SC. TRADE SECRETS 39.8.1-39.8.9
South Dakota	1988	37.29 SD. UNIFORM TRADE SECRETS ACT 37.29.1-37.29.11
Tennessee	2000	25 TN. TRADE PRACTICES 47.25.1701-47.25.1709
Texas	2013	134A TX. TRADE SECRETS 134A.001-134A.008
Utah	1989	24 UT. UNIFORM TRADE SECRETS ACT 13.24.1-13.24.9
Vermont	1996	143 VT. TRADE SECRETS 4601-4609
Virginia	1986	26 VA. UNIFORM TRADE SECRETS ACT 59.1.336-59.1.343
Washington	1982	19.108 WS. UNIFORM TRADE SECRETS ACT 19.108.010-19.108.930
West Virginia	1986	47 WV. REGULATION OF TRADE 47.22.1-47.22.10
Wisconsin	1986	134 WI. MISCELLANEOUS TRADE REGULATIONS 134.90
Wyoming	2006	24 WY. UNIFORM TRADE SECRETS ACT 40.24.101-40.24.110

This table lists the different US states that have incorporated the UTSA from 1981 to 2016. *Source: annotated states regulation*. (*) The state of Massachusetts has adopted the UTSA in 2018 but it is not part of the sample.

Appendix 8. Inevitable Disclosure Doctrine

State	Precedent-Setting Case(s)	Date	Decision
Arkansas	Southwestern Energy Co. v. Eickenhorst	3/18/1997	Adopt
Connecticut	Branson Ultrasonics Corp. v. Stratman, 921 F. Supp. 909 (D. Conn. 1996)	2/28/1996	Adopt
Delaware	E.I. duPont de Nemours & Co. v. American Potash & Chem. Corp., 200 A.2d 428 (Del. Ch. 1964)	05/05/1964	Adopt
Florida	Fountain v. Hudson Cush-N-Foam Corp., 122 So. 2d 232 (Fla. Dist. Ct. App. 1960)	07/11/1960	Adopt
	Del Monte Fresh Produce Co. v. Dole Food Co. Inc., 148 F. Supp. 2d 1326 (S.D. Fla. 2001)	5/21/2001	Reject
Georgia	Essex Group Inc. v. Southwire Co., 501 S.E.2d 501 (Ga. 1998)	6/29/1998	Adopt
Illinois	Teradyne Inc. v. Clear Communications Corp., 707 F. Supp. 353 (N.D. 111. 1989)	02/09/1989	Adopt
Indiana	Ackerman v. Kimball Intl Inc., 652 N.E.2d 507 (Ind. 1995)	07/12/1995	Adopt
Iowa	Uncle Bs Bakery v. ORourke, 920 F. Supp. 1405 (N.D. Iowa 1996)	04/01/1996	Adopt
Kansas	Bradbury Co. v. Teissier-duCros, 413 F. Supp. 2d 1203 (D. Kan. 2006)	02/02/2006	Adopt
Massachusetts	Bard v. Intoccia, 1994 U.S. Dist. LEXIS 15368 (D. Mass. 1994)	10/13/1994	Adopt
Michigan	Allis-Chalmers Manuf. Co. v. Continental Aviation & Eng. Corp., 255 F. Supp. 645 (E.D. Mich. 1966)	2/17/1966	Adopt
	CMI Intl, Inc. v. Intermet Intl Corp., 649 N.W.2d 808 (Mich. Ct. App. 2002)	4/30/2002	Reject
Minnesota	Surgidev Corp. v. Eye Technology Inc., 648 F. Supp. 661 (D. Minn. 1986)	10/10/1986	Adopt
Missouri	H&R Block Eastern Tax Servs. Inc. v. Enchura, 122 F. Supp. 2d 1067 (W.D. Mo. 2000)	11/02/2000	Adopt
New Jersey	Natl Starch & Chem. Corp. v. Parker Chem. Corp., 530 A.2d 31 (N.J. Super. Ct. 1987)	4/27/1987	Adopt
New York	Eastman Kodak Co. v. Powers Film Prod., 189 A.D. 556 (N.Y.A.D. 1919)	12/05/1919	Adopt
North Carolina	Travenol Laboratories Inc. v. Turner, 228 S.E.2d 478 (N.C. Ct. App. 1976)	6/17/1976	Adopt
Ohio	Procter & Gamble Co. v. Stoneham, 747 N.E.2d 268 (Ohio Ct. App. 2000)	9/29/2000	Adopt
Pennsylvania	Air Products & Chemical Inc. v. Johnson, 442 A.2d 1114 (Pa. Super. Ct. 1982)	2/19/1982	Adopt
Texas	Rugen v. Interactive Business Systems Inc., 864 S.W.2d 548 (Tex. App. 1993)	5/28/1993	Adopt
	Cardinal Health Staffing Network Inc. v. Bowen, 106 S.W.3d 230	04/03/2003	Reject
Utah	(Tex. App. 2003) Novell Inc. v. Timpanogos Research Group Inc., 46 U.S.P.Q.2d 1197 (Utah D.C. 1998)	1/30/1998	Adopt
Washington	Solutec Corp. Inc. v. Agnew, 88 Wash. App. 1067 (Wash. Ct. App. 1997)	12/30/1997	Adopt

This table lists a setting of previous legal cases where US state courts decided to adopt the Inevitable Disclosure Doctrine (IDD). There are also three cases (Florida, Michigan and Texas) in which courts rejected IDD after adopting it. *Source: Klasa et al. (2018)*.

Appendix 9 Noncompetition Enforceability Index

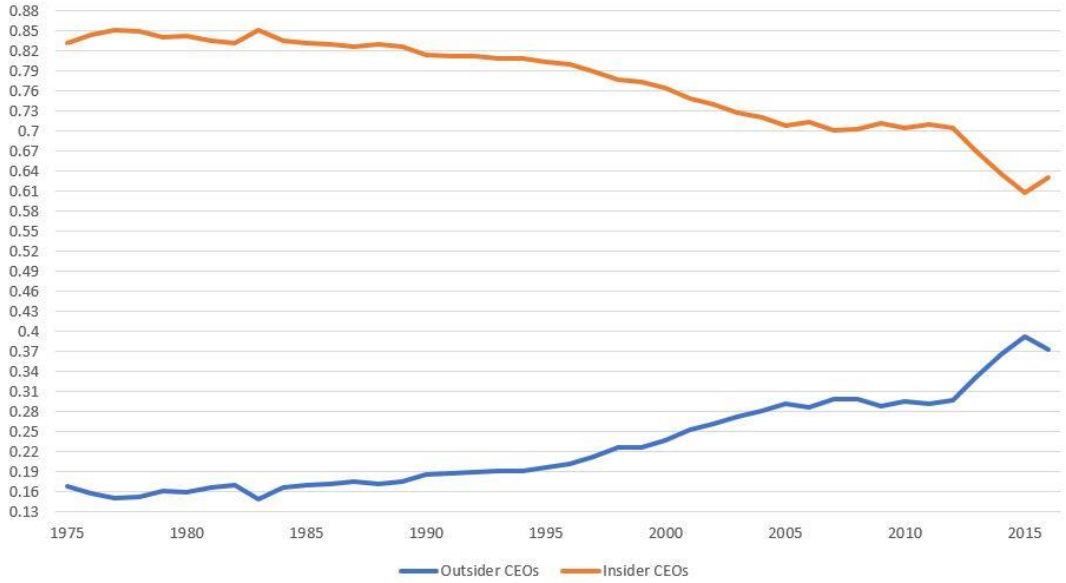
State	Score	State	Score
Alabama	5	Missouri	7
Alaska	3	Montana	2
Arizona	3	Nebraska	4
Arkansas	5	Nevada	5
California	0	New Hampshire	2
Colorado	2	New Jersey	4
Connecticut	3	New Mexico	2
Delaware	6	New York	3
DC	7	North Carolina	4
Florida 1992-1996	7	North Dakota	0
Florida 1997-2004	9	Ohio	5
Georgia	5	Oklahoma	1
Hawaii	3	Oregon	6
Idaho	6	Pennsylvania	6
Illinois	5	Rhode Island	3
Indiana	5	South Carolina	5
Iowa	6	South Dakota	5
Kansas	6	Tennessee	7
Kentucky	6	Texas 1992-1994	5
Louisiana 1992-2001, 2004	4	Texas 1995-2004	3
Maine	4	Utah	6
Maryland	5	Virginia	3
Massachusetts	6	Washington	5
Michigan	5	West Virginia	2
Minnesota	5	Wisconsin	3
Mississippi	4	Wyoming	4

Source: Garmaise (2011). Garmaise (2011) follows Malsberger (2004) to evaluate the states' agreement in noncompetition enforceability. The evaluation is based on 12 questions and thresholds applied to assess the noncompetition enforceability agreement in each state (Garmaise, 2011). Each state receives 1 point for each question if its laws exceed the threshold. The questions and thresholds are the following:
"Question 1. Is there a state statute of general application that governs the enforceability of covenants not to compete?
Threshold 1. States that enforce noncompetition agreements outside a sale-of-business context receive a score of 1.
Question 2. What is an employer's protectable interest and how is it defined?
Threshold 2. States in which the employer can prevent the employee from future independent dealings with all the firm's customers, not merely with the customers with whom the employee had direct contact, receive a score of 1.
Question 3. What must the plaintiff be able to show to prove the existence of an enforceable covenant not to compete?
Threshold 3. Laws that place greater weight on the interests of the firm relative to those of the former employee are above the threshold. For example, a law that requires that the contract be reasonably protective of the firm's business interests and only meet the condition of not being unreasonably injurious
to the employee's interests would receive a score of 1.
Question 4. Does the signing of a covenant not to compete at the inception of the employment relationship provide sufficient consideration to support the covenant?
Threshold 4. States for which the answer to Question 4 is clearly "Yes" are above the threshold.
Question 5. Will a change in the terms and conditions of employment provide sufficient consideration to support a covenant not to compete entered into after the employment relationship has begun?
Threshold 5. States for which the answer to Question 5 is clearly "Yes" are above the threshold.
Question 6. Will continued employment provide sufficient consideration to support a covenant not to compete entered into after the employment relationship has begun?
Threshold 6. States for which the answer to Question 6 is clearly "Yes" are above the threshold.
Question 7. What factors will the court consider in determining whether time and geographic restrictions in the covenant are reasonable?

Threshold 7. Jurisdictions in which courts are instructed not to consider economic or other hardships faced by the employee are above the threshold.
Question 8. Who has the burden of proving the reasonableness or unreasonableness of the covenant not to compete?
Threshold 8. States in which the burden of proof is clearly placed on the employee are above the threshold.
Question 9. What type of time or geographic restrictions has the court found to be reasonable? Unreasonable?
Threshold 9. Jurisdictions in which 3-year statewide restrictions have been upheld receive a score of 1.
Question 10. If the restrictions in the covenant not to compete are unenforceable because they are overbroad, are the courts permitted to modify the covenant to make the restrictions more narrow and to make the covenants enforceable?
Threshold 10. States for which the answer to Question 10 is clearly "Yes" are above the threshold.
Question 11. If the employer terminates the employment relationship, is the covenant enforceable?
Threshold 11. States for which the answer to Question 11 is clearly "Yes" are above the threshold.
Question 12. What damages may an employer recover and from whom for breach of a covenant not to compete?
Threshold 12. If, in addition to lost profits, there is a potential for punitive damages against the former employee, the state receives a score of 1. States that explicitly exclude consideration of the reasonableness of the contract from the calculation of damages are also above the threshold".

2.9. Tables and Figures Chapter 2

Figure 1 Outsider CEOs over time



This Figure shows the time trend of the average of externally and internally appointed CEOs over the sample period.

Figure 2 Parallel Trends

These two graphs show the dynamics of Pool Decrease on CEO Tenure and CEO Forced Turnover in period t+1.

These two graphs show the dynamics of Pool Decrease on CEO Pay Slice and CEO salary in period t+1.

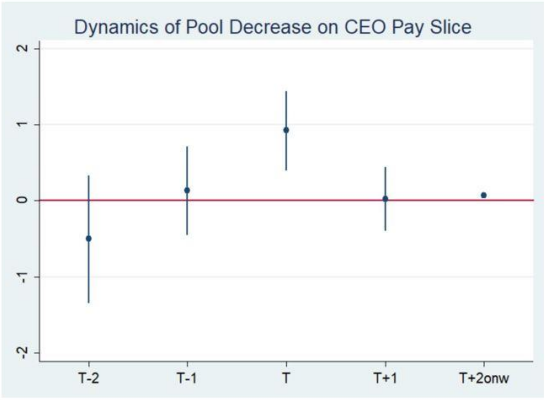


Figure 2 (Continuation)

These seven graphs show the dynamics of Pool Decrease on the different proxies of Financial Reporting Quality.

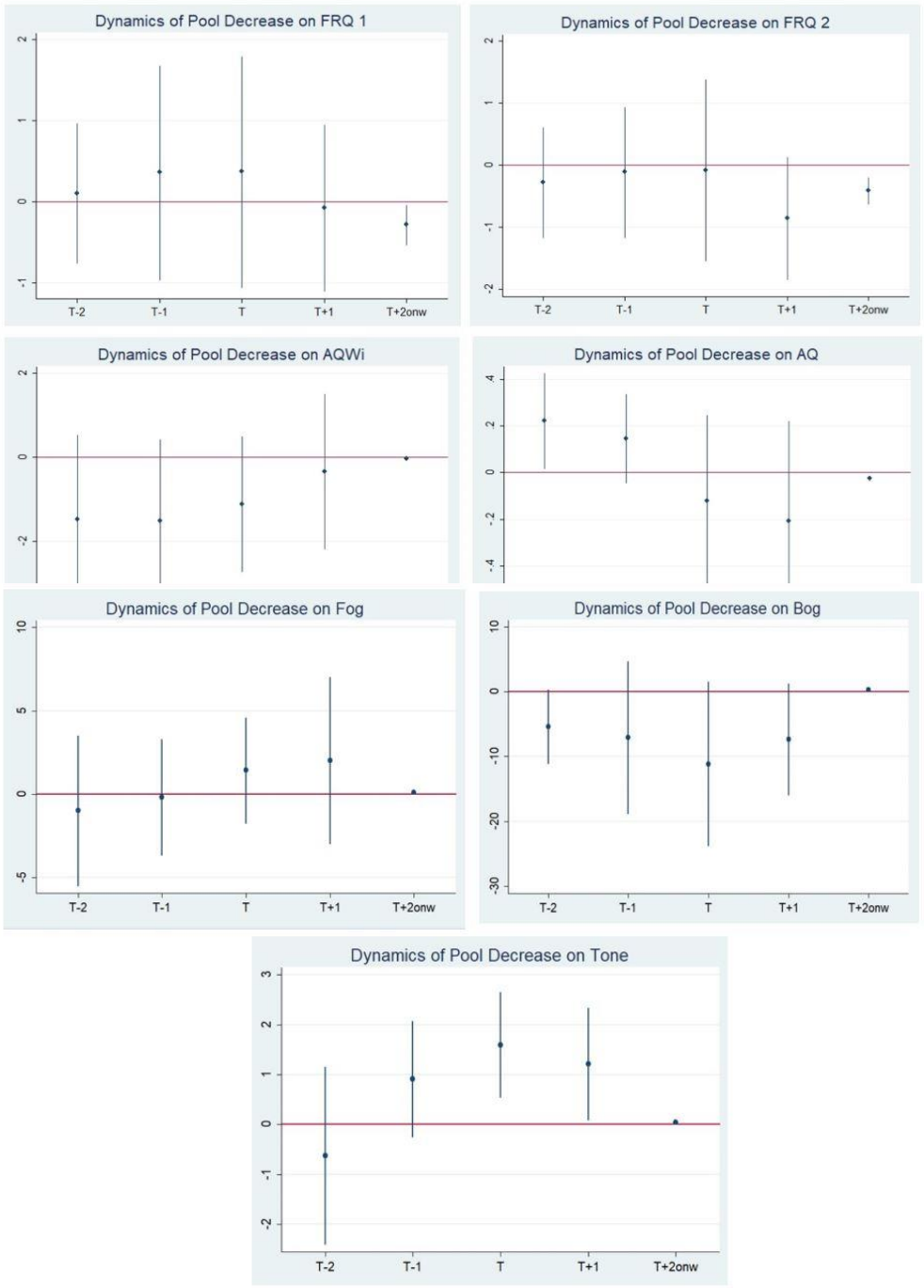


Table 1 Descriptive Statistics

PANEL A: Full Sample								
	N	**mean**	**STD**	**Min**	**Q1**	**Q50**	**Q3**	**Max**
Pool Decrease	45,391	0.981	0.577	0	0.569	0.861	1.240	4
Percentage of firms	45,391	0.420	0.148	0	0.338	0.419	0.518	1
Talent Pool	45,391	827	771	3	186	540	1344	5388
Total Firms	45,391	138	126	1	31	92	226	463
Total Executives	45,391	5.975	0.762	1	6	6	6	14
CEO Tenure	40,517	6.824	6.675	1	2	5	9	62
Forced Turnover	45,391	0.051	0.221	0	0	0	0	1
CPS	16,154	0.707	0.467	0.060	0.436	0.619	0.837	3.117
Salary	16,291	693	340	31	441	648	906	1800
Bonus	16,291	401.639	719.001	0	0	50	503.36	4062.5
Total Compensation	16,182	4813	5439	210	1352	2927	6049	30566
FRQ 1	43,285	-0.004	0.103	-0.398	-0.047	-0.004	0.040	0.378
FRQ 2	43,645	-0.002	0.123	-1.486	-0.044	-0.002	0.040	1.282
AQWi	34,662	1.071	0.812	0.011	0.848	1.002	1.162	87.116
AQ	34,645	-0.303	0.441	-5.488	-0.303	-0.150	-0.086	-0.003
Fog	15,710	19.508	1.693	0.905	18.526	19.351	20.252	41.845
Bog	33,055	83.535	7.816	48	79	84	89	140
Tone	9,258	-0.659	0.543	-4.596	-0.992	-0.637	-0.282	2.229
CEO-Firm match	34,240	-0.001	0.109	-0.194	-0.068	-0.016	0.039	0.442
Firm Efficiency	42,529	0.323	0.165	0	0.229	0.280	0.368	1
Firm Size	45,391	5.766	2.068	1.070	4.276	5.735	7.223	11.474
ROA	45,391	-0.060	0.641	-78.174	-0.045	0.033	0.076	5.677
MTB	45,391	3.119	4.496	-9.835	1.231	2.105	3.682	27.640
Leverage	45,391	0.588	1.857	-6.819	0.007	0.262	0.728	14.626
CEO Age	45,391	3.975	0.161	3.091	3.871	3.989	4.078	4.564
Outsider CEO	45,391	0.254	0.435	0	0	0	1	1

Table 1 (Continuation)

PANEL B: Pool Decrease and CEOs from the same industry						
	Both external and internal CEOs			*Only external CEOs*		
	Group	Mean	Difference	Group	Mean	Difference
Pool Decrease 50	0	0.512	0.070***	0	0.523	0.091***
	1	0.444		1	0.432	
Pool Decrease 75	0	0.490	0.085***	0	0.491	0.026
	1	0.405		1	0.465	
Pool Decrease 90	0	0.490	0.111***	0	0.491	0.094**
	1	0.379		1	0.397	
PANEL C: Pool Decrease and Outsider CEOs						
	Group	Mean	Difference			
Pool Decrease 50	0	0.249	-0.028***			
	1	0.277				
Pool Decrease 75	0	0.258	-0.062***			
	1	0.320				
Pool Decrease 90	0	0.258	0.026			
	1	0.284				
PANEL D: Outsider CEO						
	(1) Outsider	(2) Outsider Same Industry	(3) Outsider Low Talent	(4) Outsider Low Talent Same Industry	(5) Outsider Diff Industry	(6) Outsider Low Talent Diff Industry
Pool Decrease	0.025**	0.012	0.027***	0.013**	0.012**	0.014*
	(2.634)	(1.356)	(3.851)	(2.580)	(2.232)	(2.003)
Firm Size	0.002	-0.003	0.001	0.002	0.005*	-0.000
	(0.542)	(-0.767)	(0.330)	(0.850)	(1.954)	(-0.131)
ROA	-0.015***	0.006	-0.074***	-0.025***	-0.022***	-0.049***
	(-2.999)	(1.428)	(-7.293)	(-3.703)	(-7.106)	(-11.533)
MTB	-0.000	0.000	-0.002***	-0.001***	-0.000	-0.001*
	(-0.210)	(0.053)	(-4.539)	(-6.030)	(-0.458)	(-1.906)
Leverage	-0.000	-0.000	0.004***	0.002***	-0.000	0.002***
	(-0.093)	(-0.026)	(4.631)	(3.695)	(-0.086)	(3.404)
CEO Age	-0.230***	-0.093***	-0.102***	-0.053***	-0.137***	-0.048**
	(-7.475)	(-4.299)	(-4.712)	(-3.368)	(-6.753)	(-2.351)
Low Manipulation	-0.000*	-0.000	0.001***	0.001***	-0.000*	0.000***
	(-1.690)	(-0.196)	(6.905)	(5.827)	(-1.734)	(3.701)
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	28,331	28,331	28,331	28,331	28,331	28,331
Adj. R-sqr.	0.756	0.777	0.535	0.520	0.718	0.544

This table shows the descriptive statistics of the main variables of this study (Panels A, B and C). Panel D shows the relationship between the decrease in the pool of replacement CEOs and different outsider indicator variables that account for externally appointed CEOs from the same and different industries and with low talent (t-statistics are in parenthesis). The sample comprises 28,331 firm-year observations for the period 1980-2016. The number of observations corresponds to the remaining sample of the main analyses when all the controls are included. All variables are defined in Appendix 5.

Table 2 Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Pool Decrease	1													
(2) CEO Tenure	**0.017**	1												
(3) Forced Turnover	*0.009*	**-0.021**	1											
(4) CEO Pay Slice	**0.0602**	0.0156	-0.011	1										
(5) Salary	**0.157**	0.006	-0.0107	**0.2393**	1									
(6) Bonus	**-0.068**	**0.032**	*-0.016*	**0.194**	**0.292**	1								
(7) Total Compensation	**0.031**	**-0.031**	*-0.016*	**0.448**	**0.550**	**0.398**	1							
(8) FRQ 1	0.008	**-0.022**	**0.014**	**-0.025**	-0.013	-0.008	-0.001	1						
(9) FRQ 2	0.004	**-0.015**	0.008	**-0.023**	**-0.020**	-0.001	0.014	**0.915**	1					
(10) AQWi	**0.018**	-0.008	-0.005	0.000	**0.025**	0.003	**0.020**	0.001	0.003	1				
(11) AQ	**0.199**	**0.103**	**-0.015**	-0.006	**0.231**	**0.050**	0.011	0.006	**0.017**	**0.020**	1			
(12) Fog	0.005	-0.008	-0.009	0.018	**0.031**	0.000	**0.051**	-0.001	-0.001	-0.003	**-0.045**	1		
(13) Bog	**-0.078**	**-0.073**	**0.054**	**0.036**	0.014	**-0.135**	**0.089**	0.009	0.008	-0.007	**-0.174**	**0.254**	1	
(14) Tone	-0.006	**0.074**	**-0.064**	-0.003	**-0.032**	**0.091**	**-0.057**	**-0.044**	*-0.021*	*0.026*	**0.077**	**-0.108**	**-0.3312**	1

This table shows the Pearson correlation coefficients. All variables are defined in Appendix 5. Bold (italic) numbers indicate statistical significance at 1% (5%). All the continuous variables are winsorized at the 1% and 99% to mitigate the effect of outliers.

Table 3 Pool of replacement CEOs Decrease, CEO Tenure, CEO Forced Turnover and CEO Compensation

	(1) CEO Tenure	(2) CEO Tenure$_{t+1}$	(3) CEO Tenure$_{t+2}$	(5) Aggregated Tenure
Pool Decrease	0.055***	0.059***	0.072***	0.162***
	(3.820)	(3.543)	(3.778)	(2.769)
Firm Size	0.036***	0.027***	0.012	0.025
	(4.175)	(2.901)	(1.263)	(0.757)
ROA	0.002	0.030***	0.045***	0.206***
	(0.535)	(3.769)	(3.453)	(3.814)
MTB	0.002	0.002***	0.004***	0.009***
	(1.535)	(2.936)	(5.223)	(3.932)
Leverage	-0.000	-0.004	-0.008***	-0.010
	(-0.066)	(-1.398)	(-2.846)	(-1.215)
CEO Age	3.085***	1.835***	1.183***	3.887***
	(26.712)	(22.828)	(16.259)	(21.551)
Outsider CEO	-0.046	-0.009	-0.009	-0.024
	(-1.538)	(-0.448)	(-0.405)	(-0.387)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	40,481	36,449	32,748	27,411
Adj. R-sqr.	0.516	0.437	0.411	0.545

PANEL B: CEO's Forced Turnover

	(1) Forced Turnover	(2) Forced Turnover$_{t+1}$	(3) Forced Turnover$_{t+2}$	(4) Aggregated Forced Turnover
Pool Decrease	-0.009***	-0.013***	-0.012***	-0.019***
	(-3.963)	(-2.858)	(-2.986)	(-2.803)
Firm Size	-0.004***	0.004***	0.010***	0.020***
	(-3.039)	(3.648)	(8.258)	(5.713)
ROA	-0.005**	-0.008***	-0.001	-0.015**
	(-2.040)	(-3.911)	(-0.410)	(-2.337)
MTB	-0.003***	-0.002***	-0.000	0.000
	(-11.709)	(-9.094)	(-0.211)	(0.806)
Leverage	0.003***	0.002***	0.001**	-0.001
	(4.535)	(4.766)	(2.112)	(-1.236)
CEO Age	0.087***	0.077***	0.065***	0.099***
	(13.258)	(8.349)	(5.034)	(4.193)
Outsider CEO	0.020***	0.025***	0.012**	0.042***
	(5.019)	(4.790)	(2.390)	(3.361)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	45,391	40,608	36,346	32,214
Adj. R-sqr.	0.073	0.085	0.078	0.261

Table 3 (Continuation)

PANEL C: Sensitivity of Turnover to Firm Performance				
	(1) Forced Turnover$_{t+1}$	(2) Forced Turnover $_{t+2}$	(3) Forced Turnover$_{t+1}$	(4) Forced Turnover $_{t+2}$
Pool Decrease	-0.022***	-0.015***	-0.022***	-0.015***
	(-3.976)	(-3.338)	(-4.042)	(-3.328)
Pool Decrease*ChangRet	-0.043***	0.006		
	(-5.701)	(0.424)		
ChangRet	-0.169***	-0.006		
	(-17.540)	(-0.523)		
ChangAdjRet			-0.171***	-0.005
			(-17.941)	(-0.390)
Pool Decrease*ChangAdjRet			-0.042***	0.006
			(-5.409)	(0.358)
Firm Size	-0.001	0.008***	-0.001	0.008***
	(-0.442)	(4.618)	(-0.339)	(4.629)
MTB	-0.003***	0.000	-0.003***	0.000
	(-5.356)	(0.899)	(-5.288)	(0.895)
Leverage	0.003***	0.001	0.003***	0.001
	(3.992)	(1.544)	(3.961)	(1.536)
CEO Age	0.095***	0.078***	0.095***	0.078***
	(7.716)	(5.237)	(7.715)	(5.238)
Outsider CEO	0.037***	0.018***	0.037***	0.018***
	(7.023)	(3.670)	(6.977)	(3.667)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	31,559	28,226	31,559	28,226
Adj. R-sqr.	0.117	0.082	0.116	0.082
PANEL D: CEO's Compensation				
	(1) CEO Pay Slice	(2) Salary	(3) Bonus	(4) Total Compensation
Pool Decrease	0.080***	0.067***	-0.078	0.018
	(5.764)	(4.065)	(-0.955)	(0.757)
Firm Size	0.036***	0.175***	0.090**	0.384***
	(5.257)	(22.448)	(2.529)	(41.385)
ROA	0.046**	0.107***	1.767***	0.356***
	(2.406)	(3.080)	(9.070)	(6.487)
MTB	0.007***	0.006***	0.055***	0.038***
	(5.528)	(8.055)	(10.208)	(15.999)
Leverage	-0.015***	-0.019***	-0.132***	-0.063***
	(-10.808)	(-9.244)	(-8.790)	(-18.972)
CEO Age	-0.051*	0.160***	0.389	-0.058
	(-1.719)	(4.910)	(1.132)	(-1.164)
Outsider CEO	0.029**	0.027*	0.484***	0.015
	(2.206)	(1.697)	(7.534)	(0.967)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	16,112	16,251	16,251	16,142
Adj. R-sqr.	0.273	0.588	0.533	0.662

This table shows the relationship between the decrease in the pool of replacement CEOs and CEOs' tenure, CEOs' forced turnover, sensitivity of turnover to firm performance and compensation. Panel A shows the relationship between *Pool Decrease* and CEO Tenure. The dependent variables are in logarithm. Panel B shows the relationship between *Pool Decrease* and CEO Forced Turnover. Panel C shows the relationship between *Pool Decrease* and sensitivity of turnover to firm performance. Panel D shows the relationship between *Pool Decrease* and CEO compensation. Dependent variables in columns (2), (3) and (4) of Panel C are in logarithm. All variables are defined in Appendix 5. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 4 Pool of replacement CEOs Decrease and Financial Reporting Quality

	(1) FRQ 1	(2) FRQ 2	(3) AQWi	(4) AQ	(5) Fog	(6) Bog	(7) Tone
Pool Decrease	-0.270**	-0.404***	-0.023**	-0.041***	0.088**	0.338***	0.048**
	(-2.163)	(-3.770)	(-2.252)	(-5.298)	(2.369)	(3.042)	(2.596)
Cycle	-0.005***	-0.007***	-0.000	-0.000	-0.000	-0.001***	0.000
	(-8.427)	(-10.827)	(-0.105)	(-0.201)	(-0.318)	(-5.003)	(0.235)
REM	-1.678***	-2.873***	0.041**	-0.022**	0.025	0.300***	-0.033
	(-7.862)	(-8.713)	(2.248)	(-2.662)	(0.820)	(2.806)	(-1.304)
Audit Tenure	0.173	-0.040	-0.021***	0.067***	-0.052	-0.390***	-0.020
	(1.114)	(-0.249)	(-2.699)	(6.011)	(-1.503)	(-5.176)	(-1.498)
Big8	-0.188	-0.188	0.032	-0.039***	0.008	0.909***	0.089*
	(-1.327)	(-1.111)	(0.715)	(-3.518)	(0.142)	(6.590)	(1.867)
Firm Size	-0.165	0.298	-0.009*	-0.031***	-0.054	0.220***	0.081***
	(-0.934)	(1.372)	(-1.887)	(-3.624)	(-1.560)	(3.300)	(8.323)
ROA	-2.121***	-2.767***	0.008***	0.003	-0.039***	-0.232***	0.147***
	(-6.402)	(-10.287)	(4.791)	(0.758)	(-2.984)	(-5.956)	(4.159)
MTB	-0.059***	-0.015	0.002***	-0.004***	-0.010**	-0.011	0.008***
	(-3.887)	(-0.665)	(3.182)	(-6.989)	(-2.641)	(-1.197)	(4.454)
Leverage	0.018	-0.045	-0.003*	0.005***	0.041***	0.069***	-0.018***
	(0.566)	(-1.173)	(-1.694)	(5.334)	(4.372)	(3.018)	(-5.629)
CEO Age	0.001	-0.444	0.038	0.172***	0.040	-0.607	-0.043
	(0.002)	(-0.439)	(1.376)	(7.184)	(0.335)	(-1.592)	(-0.823)
Outsider CEO	-0.100	-0.211	0.041***	0.015*	0.075**	0.113	0.003
	(-0.545)	(-1.087)	(5.588)	(1.986)	(2.418)	(1.310)	(0.113)
Early Years	0.073	0.036	0.010	-0.015***	0.012	0.028	-0.062***
	(0.998)	(0.470)	(1.605)	(-4.372)	(0.419)	(0.491)	(-3.618)
Firm FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
Observations	40,085	40,085	32,648	32,634	14,909	30,951	8,762
Adj. R-sqr.	0.089	0.086	0.216	0.633	0.274	0.780	0.639

This table shows the relationship between the decrease in the pool of replacement CEOs and financial reporting quality considering both financial (Columns 1, 2, 3 and 4) and disclosure measures (Columns 5, 6 and 7). Dependent variables *FRQ 1* and *FRQ 2* are multiplied by 100 to ease the coefficients interpretation. All variables are defined in Appendix 5. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 5 Pool of replacement CEOs Decrease by Subsamples

PANEL A: Subsample of high and low technological firms														
	High technological firms							*Low technological firms*						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	FRQ 1	FRQ 2	AQWi	AQ	Fog	Bog	Tone	FRQ_1	FRQ_2	AQWi	AQ	Fog	Bog	Tone
Pool Decrease	-0.998***	-1.040***	0.019	-0.090***	0.183	0.641**	-0.044	-0.237*	-0.332**	-0.037***	-0.009	0.062	0.156	0.061***
	(-3.811)	(-2.754)	(0.748)	(-3.179)	(0.941)	(2.164)	(-1.297)	(-1.684)	(-2.618)	(-2.922)	(-1.660)	(0.875)	(1.159)	(3.600)
Cycle	-0.005***	-0.007***	0.000	0.000	-0.000	-0.002***	0.000	-0.005***	-0.008***	-0.000	-0.000**	0.000	0.000	-0.000
	(-6.655)	(-8.802)	(1.029)	(0.718)	(-0.800)	(-7.515)	(1.041)	(-6.090)	(-7.695)	(-0.932)	(-2.515)	(0.708)	(0.791)	(-0.933)
REM	-1.830***	-3.369***	0.010*	-0.028*	0.028	0.402***	-0.065***	-1.616**	-2.387***	0.088*	0.005	0.020	-0.052	0.009
	(-2.745)	(-4.511)	(1.824)	(-1.892)	(0.930)	(3.407)	(-5.079)	(-2.457)	(-4.740)	(1.825)	(0.391)	(0.292)	(-0.277)	(0.235)
Audit Tenure	-0.141	-0.409	-0.009	0.110***	-0.021	-0.709***	0.007	0.366***	0.182	-0.022**	0.029***	-0.063	-0.141	-0.026
	(-0.599)	(-1.616)	(-0.450)	(9.777)	(-0.446)	(-5.100)	(0.346)	(3.334)	(1.546)	(-2.312)	(3.928)	(-1.157)	(-0.932)	(-1.613)
Big8	-0.786**	-0.879**	-0.001	-0.017	-0.155	1.098***	0.178	0.062	0.165	0.047	-0.011	0.088	0.558***	0.026
	(-2.562)	(-2.698)	(-0.067)	(-0.847)	(-1.449)	(2.917)	(1.686)	(0.236)	(0.649)	(0.602)	(-1.256)	(1.028)	(2.915)	(0.714)
Firm Size	0.198	0.890***	0.005	-0.047***	-0.121**	0.267**	0.071***	-0.388***	-0.114	-0.028***	-0.018**	0.015	0.294***	0.091***
	(0.671)	(2.971)	(1.556)	(-4.175)	(-2.574)	(2.501)	(6.279)	(-2.992)	(-0.709)	(-2.780)	(-2.084)	(0.510)	(4.390)	(5.033)
ROA	-1.726***	-2.365***	0.005***	0.007*	-0.005	-0.163***	0.052***	-4.291***	-5.060***	0.010	-0.018	-0.094***	-0.594***	0.344***
	(-5.575)	(-7.718)	(3.288)	(1.712)	(-0.395)	(-8.277)	(3.733)	(-8.175)	(-5.017)	(1.318)	(-1.537)	(-3.818)	(-4.415)	(7.143)
MTB	-0.121***	-0.116**	0.001	-0.002**	-0.007	-0.002	0.004**	0.034	0.125***	0.004***	-0.002***	-0.013***	-0.040***	0.010***
	(-3.707)	(-2.573)	(0.854)	(-2.102)	(-1.425)	(-0.196)	(2.137)	(1.410)	(4.066)	(2.821)	(-5.193)	(-3.030)	(-3.989)	(2.958)
Leverage	0.121*	0.136*	-0.000	0.002	0.020**	-0.008	-0.010	-0.087***	-0.203***	-0.003	0.003***	0.049***	0.123***	-0.020***
	(1.902)	(1.749)	(-0.336)	(1.017)	(2.292)	(-0.266)	(-1.463)	(-3.559)	(-6.798)	(-1.595)	(4.838)	(4.392)	(4.848)	(-2.825)
CEO Age	-1.086	-1.125	-0.014	0.213***	0.149	0.729	0.088	0.881**	0.329	0.089*	0.112***	-0.017	-1.199***	-0.128**
	(-0.648)	(-0.591)	(-0.473)	(4.887)	(0.585)	(0.854)	(1.354)	(2.260)	(0.602)	(1.752)	(7.573)	(-0.073)	(-2.949)	(-2.273)
Outsider CEO	0.541	0.455	0.017	0.031*	-0.069	-0.085	0.105**	-0.534***	-0.689***	0.061***	-0.003	0.159***	0.310**	-0.051*
	(1.486)	(1.645)	(1.097)	(1.766)	(-1.446)	(-0.488)	(2.135)	(-3.227)	(-2.921)	(4.255)	(-0.617)	(3.154)	(2.249)	(-1.769)
Early Years	0.030	0.014	-0.008*	-0.034***	0.002	0.103	-0.016	0.117	0.074	0.021**	-0.003	0.022	-0.006	-0.084***
	(0.196)	(0.087)	(-1.945)	(-5.958)	(0.031)	(1.289)	(-0.764)	(1.386)	(0.706)	(2.606)	(-0.832)	(0.794)	(-0.092)	(-5.365)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	14,877	14,877	12,367	12,363	4,926	11,941	2,716	25,208	25,208	20,281	20,271	9,983	19,010	6,046
Adj. R-sqr.	0.065	0.065	0.039	0.614	0.249	0.745	0.659	0.113	0.111	0.271	0.620	0.286	0.747	0.620

Table 5 (Continuation)

PANEL B: Subsample of high and low competition

	High competition firms							*Low competition firms*						
	(1) FRQ 1	(2) FRQ 2	(3) AQWi	(4) AQ	(5) Fog	(6) Bog	(7) Tone	(8) FRQ 1	(9) FRQ 2	(10) AQWi	(11) AQ	(12) Fog	(13) Bog	(14) Tone
Pool Decrease	-0.415**	-0.482**	-0.019	-0.048***	0.039	0.466***	0.040*	-0.031	-0.275	-0.071***	-0.004	0.176	-0.074	0.063
	(0.203)	(0.190)	(0.013)	(0.008)	(0.046)	(0.107)	(0.020)	(0.474)	(0.447)	(0.017)	(0.003)	(0.113)	(0.200)	(0.062)
Cycle	-0.005***	-0.007***	-0.000	-0.000	0.000	-0.001***	-0.000	-0.022***	-0.025***	-0.000	0.000	-0.002***	-0.002	0.001**
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.004)	(0.004)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)
REM	-1.633***	-2.908***	0.043**	-0.022**	0.016	0.258**	-0.053**	-2.797***	-2.936***	0.013	0.006	-0.074	0.213	0.153***
	(0.252)	(0.363)	(0.017)	(0.009)	(0.026)	(0.103)	(0.026)	(0.636)	(0.450)	(0.022)	(0.005)	(0.185)	(0.366)	(0.052)
Audit Tenure	0.154	-0.057	-0.018**	0.070***	-0.041	-0.348***	-0.025	-0.015	-0.086	0.005	0.017***	-0.084	-0.347	0.007
	(0.171)	(0.178)	(0.009)	(0.011)	(0.041)	(0.067)	(0.015)	(0.142)	(0.148)	(0.015)	(0.003)	(0.141)	(0.328)	(0.021)
Big8	-0.116	-0.158	0.020	-0.022**	-0.031	0.777***	0.070*	0.358	0.272	0.353**	0.004	1.026	-0.027	0.076
	(0.141)	(0.172)	(0.050)	(0.010)	(0.057)	(0.145)	(0.041)	(0.696)	(1.193)	(0.139)	(0.008)	(0.733)	(1.027)	(0.079)
Firm Size	-0.234	0.337	-0.015***	-0.040***	-0.052	0.269***	0.109***	-0.164	0.132	0.046	-0.009**	0.006	0.048	-0.004
	(0.230)	(0.269)	(0.006)	(0.010)	(0.033)	(0.073)	(0.011)	(0.298)	(0.359)	(0.034)	(0.004)	(0.132)	(0.261)	(0.030)
ROA	-2.092***	-2.764***	0.009***	0.004	-0.042***	-0.235***	0.100***	-11.743***	-9.337***	-0.091	0.084**	0.218	-4.456***	1.457***
	(0.314)	(0.267)	(0.002)	(0.004)	(0.014)	(0.038)	(0.027)	(2.769)	(1.989)	(0.154)	(0.033)	(0.823)	(1.493)	(0.203)
MTB	-0.066***	-0.025	0.003***	-0.004***	-0.007*	-0.002	0.008***	0.100*	0.141***	0.002	-0.002***	-0.021*	-0.096***	0.002
	(0.016)	(0.023)	(0.001)	(0.001)	(0.004)	(0.011)	(0.002)	(0.058)	(0.051)	(0.003)	(0.000)	(0.011)	(0.022)	(0.003)
Leverage	0.032	-0.033	-0.002	0.006***	0.035***	0.072***	-0.020***	-0.233**	-0.263**	-0.009*	0.002**	0.056***	0.058	-0.003
	(0.028)	(0.037)	(0.001)	(0.001)	(0.010)	(0.025)	(0.003)	(0.098)	(0.096)	(0.005)	(0.001)	(0.018)	(0.035)	(0.006)
CEO Age	-0.299	-0.780	0.033	0.190***	-0.036	-0.383	0.043	-0.023	-0.296	0.138	-0.002	0.698	-1.445	-0.173*
	(0.835)	(1.058)	(0.025)	(0.024)	(0.130)	(0.557)	(0.046)	(0.735)	(0.759)	(0.144)	(0.012)	(0.558)	(1.737)	(0.087)
Outsider CEO	-0.195	-0.258	0.049***	0.009	0.085*	0.179**	0.025	0.236	0.014	-0.005	0.010	0.143	0.043	-0.034
	(0.182)	(0.188)	(0.008)	(0.005)	(0.050)	(0.085)	(0.029)	(0.159)	(0.154)	(0.024)	(0.012)	(0.097)	(0.444)	(0.031)
Early Years	0.081	0.071	0.002	-0.015***	0.025	0.011	-0.055***	-0.011	-0.143	0.027	-0.005**	-0.019	-0.134	-0.078**
	(0.075)	(0.074)	(0.008)	(0.004)	(0.029)	(0.060)	(0.015)	(0.149)	(0.146)	(0.021)	(0.002)	(0.040)	(0.105)	(0.032)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	34,988	34,988	28,523	28,509	12,554	27,037	6,604	4,959	4,959	4,009	4,009	2,293	3,747	2,113
Adj. R-sqr.	0.083	0.080	0.212	0.629	0.260	0.786	0.666	0.151	0.134	0.249	0.530	0.366	0.783	0.632

Panel A shows the relationship between the decrease in the pool of replacement CEOs and financial reporting quality for the subsample of high technological firms (Columns 1, 2, 3, 4, 5, 6 and 7) and for the subsample of low technological firms (Columns 8, 9, 10, 11, 12, 13 and 14). Panel B shows the relationship between the decrease in the pool of replacement CEOs and financial reporting quality for the subsample of firms with high (Columns 1, 2, 3, 4, 5, 6 and 7) and low (Columns 8, 9, 10, 11, 12, 13 and 14) competence using the Herfindahl index. Dependent variables *FRQ 1* and *FRQ 2* are multiplied by 100 to ease the coefficients interpretation. All

variables are defined in Appendix 5. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 6 Pool of replacement CEOs Decrease, CEO-Firm Match and Firm Efficiency

	(1) CEO-Firm Match	(2) CEO-Firm $Match_{t+1}$	(3) CEO-Firm $Match_{t+2}$	(4) Firm Efficiency	(5) Firm $Efficiency_{t+1}$	(6) Firm $Efficiency_{t+2}$
Pool Decrease	-0.007***	-0.005***	-0.003	-0.005**	-0.006**	-0.010***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Firm Size	0.005***	0.005***	0.005***	0.042***	0.030***	0.024***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
ROA	0.014***	0.012***	0.007***	0.051***	0.015***	0.010***
	(0.002)	(0.003)	(0.002)	(0.007)	(0.004)	(0.003)
MTB	0.001***	0.001***	0.001***	0.003***	0.004***	0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	-0.002***	-0.002***	-0.002***	-0.005***	-0.005***	-0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
CEO Age	0.017**	0.015**	0.012	0.006	0.011*	0.014**
	(0.008)	(0.007)	(0.008)	(0.005)	(0.006)	(0.006)
Outsider CEO	-0.016***	-0.009***	-0.007**	-0.003	-0.005**	-0.004
	(0.002)	(0.002)	(0.003)	(0.003)	(0.002)	(0.004)
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	34,221	30,585	27,366	42,457	38,410	34,533
Adj. R-sqr.	0.840	0.838	0.841	0.643	0.634	0.636

This table shows the relationship between the decrease in the pool of replacement CEOs and current and future *CEO-Firm Match* and *Firm Efficiency*. All variables are defined in Appendix 5. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 7 Pool of replacement CEOs Decrease and Future Firm Performance

	(1) AdjROA	(2) $AdjROA_{t+1}$	(3) $AdjROA_{t+2}$	(4) AdjRet	(5) $AdjRet_{t+1}$	(6) $AdjRet_{t+2}$
Pool Decrease	-0.023***	-0.026***	-0.028***	-0.002	-0.005*	-0.003*
	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
Firm Size	0.089***	0.007**	-0.010***	-0.006***	-0.013***	-0.009***
	(0.007)	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)
Returns	0.023***	0.044***	0.013***			
	(0.008)	(0.006)	(0.004)			
ROA				0.009*	-0.002	0.010***
				(0.005)	(0.004)	(0.002)
MTB	0.006***	0.003***	-0.000	0.003***	-0.001***	-0.001***
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	-0.010***	-0.007***	0.001	-0.004***	0.001	0.002***
	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)
CEO Age	-0.028*	0.006	0.009	-0.006	-0.000	-0.007
	(0.015)	(0.012)	(0.009)	(0.005)	(0.005)	(0.007)
Outsider CEO	-0.025***	-0.009	0.006	-0.001	-0.001	0.004
	(0.004)	(0.006)	(0.006)	(0.003)	(0.002)	(0.003)
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	39,549	35,397	31,666	39,549	36,233	32,588
Adj. R-sqr.	0.442	0.437	0.461	0.018	0.014	0.017

This table shows the relationship between the decrease in the pool of replacement CEOs and current and future firm performance measured using industry-adjusted ROA (Columns 1, 2 and 3) and industry-adjusted Returns (Columns 4, 5 and 6). All variables are defined in Appendix 5. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 8 Pool Decrease by "Winners" Subsample

PANEL A: CEO Tenure				
	Winners 1 = 1	*Winners 2 = 1*	*Winners 1 = 0*	*Winners 2 = 0*
	(1)	(2)	(3)	(4)
	CEO Tenure	CEO Tenure	CEO Tenure	CEO Tenure
Pool Decrease	0.069	0.339***	0.061***	0.065***
	(0.119)	(0.076)	(0.014)	(0.015)
Firm Size	0.169***	0.316*	0.022*	0.026**
	(0.028)	(0.165)	(0.012)	(0.011)
ROA	0.223	0.163	0.030**	0.031***
	(0.227)	(0.308)	(0.011)	(0.011)
MTB	0.000	0.015**	0.003	0.003
	(0.008)	(0.007)	(0.002)	(0.002)
Leverage	0.029***	-0.011	-0.001	-0.001
	(0.009)	(0.018)	(0.004)	(0.004)
CEO Age	3.673***	3.935***	3.160***	3.150***
	(1.032)	(0.811)	(0.132)	(0.129)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	591	198	34,555	34,938
Adj. R-sqr.	0.777	0.780	0.518	0.519
PANEL B: CEO Forced Turnover				
	Winners 1 = 1	*Winners 2 = 1*	*Winners 1 = 0*	*Winners 2 = 0*
	(1)	(2)	(3)	(4)
	Forced Turnover	Forced Turnover	Forced Turnover	Forced Turnover
Pool Decrease	-0.075***	-0.097*	-0.011***	-0.011***
	(0.017)	(0.047)	(0.002)	(0.003)
Firm Size	-0.048***	0.005	-0.003**	-0.003**
	(0.004)	(0.024)	(0.001)	(0.001)
ROA	0.000	0.228***	-0.032***	-0.033***
	(0.078)	(0.075)	(0.003)	(0.003)
MTB	-0.003	-0.005**	-0.003***	-0.003***
	(0.004)	(0.002)	(0.000)	(0.000)
Leverage	-0.003	-0.001	0.003***	0.003***
	(0.005)	(0.015)	(0.001)	(0.001)
CEO Age	0.186***	0.631	0.083***	0.082***
	(0.045)	(0.514)	(0.008)	(0.008)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	652	210	38,904	39,337
Adj. R-sqr.	0.176	0.207	0.074	0.074

This table shows the relationship between the decrease in the pool of replacement CEOs and *CEO Tenure* and *Forced Turnover* by "Winners" subsamples. All variables are defined in Appendix 5. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 9 Pool of replacement CEOs Decrease and Firm Over-investment

	(1) Overinv Firm	(2) Overinv Year	(3) Overinv Industry	(4) Overinv Firm	(5) Overinv Year	(6) Overinv Industry
Pool Decrease	0.060	0.022**	0.005	0.127*	0.019***	0.016**
	(0.067)	(0.010)	(0.006)	(0.073)	(0.007)	(0.006)
Firm Size	-0.570***	-0.112***	-0.011***	-0.393***	-0.021***	-0.001
	(0.040)	(0.003)	(0.002)	(0.041)	(0.004)	(0.001)
ROA	0.240***	-0.011***	0.004	0.164***	-0.068***	0.008***
	(0.052)	(0.003)	(0.003)	(0.031)	(0.012)	(0.002)
MTB	0.155***	0.009***	0.001***	0.252***	0.014***	0.001**
	(0.012)	(0.001)	(0.000)	(0.017)	(0.001)	(0.000)
Leverage	-0.386***	-0.020***	-0.000	-0.648***	-0.029***	-0.000
	(0.044)	(0.002)	(0.001)	(0.069)	(0.002)	(0.000)
CEO Age	-0.381	0.092***	0.016	-0.475***	-0.032	0.005
	(0.238)	(0.014)	(0.013)	(0.131)	(0.022)	(0.005)
Outsider CEO	-0.173**	0.010	-0.014***	-0.151	-0.005	-0.008***
	(0.064)	(0.006)	(0.005)	(0.105)	(0.008)	(0.002)
Firm FE	YES	YES	YES	NO	NO	NO
Industry FE	NO	NO	NO	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	45,391	18,991	39,015	45,549	19,208	39,249
Adj. R-sqr.	0.740	0.453	0.360	0.507	0.212	0.355

This table shows the relationship between the decrease in the pool of replacement CEOs and firm over-investment decisions. Over-investment proxies are calculated following Biddle et al. (2009). All variables are defined in Appendix 5. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 10 Alternative Measure of Pool of replacement CEOs Decrease

	(1) FRQ_1	(2) FRQ_2	(3) FRQ_3	(4) FRQ_4	(5) fog	(6) FRQ_5	(7) FRQ_6
Pool Decrease Ability	-0.183	-0.255***	-0.013	-0.014***	0.017	0.160**	0.035***
	(-1.600)	(-2.900)	(-0.923)	(-3.649)	(0.441)	(2.157)	(2.977)
Cycle	-0.005***	-0.007***	0.000*	-0.000	-0.000	-0.001***	0.000
	(-8.298)	(-10.710)	(1.736)	(-0.087)	(-0.302)	(-5.073)	(0.528)
REM	-1.657***	-2.858***	0.040**	-0.023**	0.025	0.301***	-0.033
	(-7.903)	(-8.821)	(2.203)	(-2.679)	(0.796)	(2.811)	(-1.319)
Audit Tenure	0.177	-0.040	-0.019**	0.068***	-0.051	-0.399***	-0.019
	(1.101)	(-0.238)	(-2.312)	(6.113)	(-1.394)	(-5.293)	(-1.410)
Big8	-0.186	-0.185	0.029	-0.040***	-0.000	0.939***	0.089*
	(-1.285)	(-1.046)	(0.686)	(-3.599)	(-0.007)	(6.625)	(1.766)
Firm Size	-0.156	0.315	-0.009*	-0.031***	-0.057	0.216***	0.080***
	(-0.917)	(1.468)	(-1.927)	(-3.587)	(-1.622)	(3.130)	(8.484)
ROA	-2.122***	-2.775***	0.008***	0.003	-0.039***	-0.229***	0.145***
	(-6.387)	(-10.248)	(4.732)	(0.751)	(-2.918)	(-6.054)	(4.241)
MTB	-0.057***	-0.013	0.002***	-0.004***	-0.010***	-0.010	0.008***
	(-3.683)	(-0.567)	(3.193)	(-6.715)	(-2.835)	(-1.104)	(4.507)
Leverage	0.018	-0.047	-0.003*	0.005***	0.043***	0.067***	-0.017***
	(0.533)	(-1.168)	(-1.833)	(5.110)	(4.562)	(2.937)	(-5.665)
CEO Age	-0.028	-0.487	0.032	0.174***	0.037	-0.604	-0.041
	(-0.032)	(-0.471)	(1.164)	(7.127)	(0.293)	(-1.557)	(-0.759)
Outsider CEO	-0.103	-0.218	0.042***	0.015*	0.072**	0.107	0.003
	(-0.534)	(-1.054)	(5.772)	(1.958)	(2.330)	(1.216)	(0.124)
Early Years	0.077	0.043	0.010*	-0.014***	0.010	0.018	-0.062***
	(1.040)	(0.558)	(1.729)	(-4.177)	(0.341)	(0.333)	(-3.549)
Firm FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
Observations	39,551	39,551	32,379	32,365	14,812	30,636	8,691
Adj. R-sqr.	0.088	0.085	0.218	0.633	0.275	0.780	0.638

This table shows the relationship between the decrease in the pool of replacement CEOs and financial reporting quality using an alternative proxy for decrease in the pool of replacement CEOs (*Pool Decrease Ability*) that accounts for firms' talent loss. All variables are defined in Appendix 5. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 11 IDD and NCA

PANEL A: CEO Tenure				
	(1)	(2)	(3)	(5)
	CEO Tenure	CEO Tenure$_{t+1}$	CEO Tenure$_{t+2}$	Aggregated Tenure
Pool Decrease	0.051***	0.055***	0.068***	0.154**
	(0.015)	(0.018)	(0.020)	(0.063)
IDD	0.033	0.046	0.056	0.099
	(0.045)	(0.040)	(0.050)	(0.129)
NCA	0.012***	0.008*	0.006	0.015
	(0.003)	(0.005)	(0.004)	(0.010)
Firm Size	0.038***	0.028***	0.013	0.025
	(0.009)	(0.010)	(0.010)	(0.031)
ROA	0.001	0.031***	0.044***	0.200***
	(0.003)	(0.009)	(0.014)	(0.056)
MTB	0.002	0.002**	0.004***	0.008***
	(0.001)	(0.001)	(0.001)	(0.002)
Leverage	-0.000	-0.004	-0.008***	-0.010
	(0.003)	(0.003)	(0.003)	(0.008)
CEO Age	3.072***	1.825***	1.176***	3.850***
	(0.112)	(0.077)	(0.070)	(0.182)
Outsider CEO	-0.048*	-0.011	-0.012	-0.036
	(0.028)	(0.019)	(0.023)	(0.062)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	39,749	35,793	32,159	26,917
Adj. R-sqr.	0.516	0.437	0.412	0.546
PANEL B: Forced Turnover				
	(1)	(2)	(3)	(4)
	Forced Turnover	Forced Turnover$_{t+1}$	Forced Turnover$_{t+2}$	Aggregated Forced Turnover
Pool Decrease	-0.009***	-0.013***	-0.012***	-0.018***
	(0.002)	(0.005)	(0.004)	(0.007)
IDD	-0.010***	-0.010***	-0.008*	-0.023**
	(0.003)	(0.003)	(0.004)	(0.010)
NCA	-0.000	-0.001	-0.001	0.000
	(0.002)	(0.001)	(0.001)	(0.001)
Firm Size	-0.004***	0.004***	0.010***	0.021***
	(0.002)	(0.001)	(0.001)	(0.003)
ROA	-0.005**	-0.009***	-0.001	-0.015**
	(0.003)	(0.003)	(0.003)	(0.007)
MTB	-0.003***	-0.002***	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	0.003***	0.002***	0.001**	-0.001
	(0.001)	(0.000)	(0.000)	(0.001)
CEO Age	0.086***	0.077***	0.064***	0.097***
	(0.007)	(0.010)	(0.013)	(0.024)
Outsider CEO	0.020***	0.024***	0.013**	0.041***
	(0.004)	(0.005)	(0.005)	(0.012)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	44,602	39,905	35,718	31,664
Adj. R-sqr.	0.073	0.085	0.079	0.262

Table 11 (Continuation)

PANEL C: CEO Compensation				
	(1)	(2)	(3)	(4)
	CEO Pay Slice	Salary	Bonus	Total Compensation
Pool Decrease	0.077***	0.064***	-0.039	0.007
	(0.014)	(0.019)	(0.082)	(0.018)
IDD	0.026**	0.006	0.056	-0.031
	(0.012)	(0.013)	(0.119)	(0.021)
NCA	0.007***	-0.000	-0.009	0.008
	(0.002)	(0.006)	(0.012)	(0.006)
Firm Size	0.038***	0.176***	0.082**	0.386***
	(0.006)	(0.009)	(0.032)	(0.009)
ROA	0.045**	0.109***	1.761***	0.353***
	(0.020)	(0.035)	(0.200)	(0.055)
MTB	0.008***	0.007***	0.057***	0.038***
	(0.001)	(0.001)	(0.006)	(0.003)
Leverage	-0.015***	-0.019***	-0.134***	-0.063***
	(0.001)	(0.002)	(0.016)	(0.003)
CEO Age	-0.059**	0.152***	0.412	-0.071
	(0.027)	(0.034)	(0.340)	(0.046)
Outsider CEO	0.028**	0.026	0.499***	0.013
	(0.013)	(0.016)	(0.059)	(0.016)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	15,864	15,999	15,999	15,891
Adj. R-sqr.	0.273	0.588	0.533	0.660

Table 11 (Continuation)

PANEL D: Financial Reporting Quality							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	FRQ_1	FRQ_2	AQWi	AQ	Fog	Bog	Tone
Pool Decrease	-0.215*	-0.362***	-0.024**	-0.043***	0.087**	0.359***	0.040**
	(0.117)	(0.108)	(0.011)	(0.008)	(0.039)	(0.113)	(0.018)
IDD	0.065	0.147	-0.000	-0.002	0.071	0.604**	-0.017
	(0.272)	(0.255)	(0.025)	(0.015)	(0.060)	(0.251)	(0.023)
NCA	-0.121***	-0.091***	-0.004	0.009***	-0.034***	-0.135	0.020***
	(0.034)	(0.033)	(0.007)	(0.002)	(0.013)	(0.090)	(0.006)
Cycle	-0.005***	-0.007***	-0.000	-0.000	-0.000	-0.001***	-0.000
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
REM	-1.734***	-2.928***	0.041**	-0.023***	0.025	0.297***	-0.034
	(0.213)	(0.315)	(0.019)	(0.008)	(0.030)	(0.106)	(0.026)
Audit Tenure	0.171	-0.046	-0.022**	0.068***	-0.053	-0.398***	-0.021
	(0.154)	(0.159)	(0.008)	(0.010)	(0.035)	(0.076)	(0.014)
Big8	-0.072	-0.051	0.034	-0.042***	0.009	0.928***	0.085*
	(0.144)	(0.180)	(0.047)	(0.010)	(0.059)	(0.120)	(0.047)
Firm Size	-0.194	0.282	-0.010*	-0.031***	-0.054	0.223***	0.082***
	(0.187)	(0.224)	(0.005)	(0.008)	(0.036)	(0.066)	(0.009)
ROA	-2.099***	-2.748***	0.008***	0.003	-0.038***	-0.231***	0.143***
	(0.326)	(0.269)	(0.002)	(0.004)	(0.012)	(0.037)	(0.034)
MTB	-0.061***	-0.015	0.002***	-0.004***	-0.010**	-0.012	0.007***
	(0.016)	(0.023)	(0.001)	(0.001)	(0.004)	(0.010)	(0.001)
Leverage	0.023	-0.041	-0.003*	0.005***	0.040***	0.068***	-0.017***
	(0.033)	(0.042)	(0.001)	(0.001)	(0.009)	(0.023)	(0.003)
CEO Age	0.072	-0.361	0.037	0.174***	0.039	-0.640	-0.040
	(0.899)	(1.078)	(0.028)	(0.023)	(0.121)	(0.405)	(0.049)
Outsider CEO	-0.126	-0.227	0.041***	0.014*	0.076**	0.115	0.006
	(0.176)	(0.192)	(0.008)	(0.008)	(0.033)	(0.082)	(0.027)
Early Years	0.060	0.013	0.011	-0.015***	0.011	0.020	-0.062***
	(0.075)	(0.076)	(0.007)	(0.004)	(0.031)	(0.053)	(0.017)
Firm FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
Observations	39,449	39,449	32,127	32,114	14,776	30,627	8,660
Adj. R-sqr.	0.089	0.085	0.215	0.630	0.274	0.780	0.639

This table shows the main regressions with IDD and NCA as controls. All variables are defined in Appendix 5. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Chapter 3

Takeover Protection through Narrative Disclosure

3.1. Introduction

We examine the association between managerial strategic use of narrative disclosure tone and the existence of hostile takeover threats. We predict that firms use narratives as a takeover defense mechanism. In particular, we expect that managers use more pessimistic tone in 10-K reports to lower firm visibility and drive away bidders' attention, protecting themselves from takeovers. To assess whether pessimistic language acts as a defense mechanism, we study the use of negative tone, as well as analyze abnormal negative tone, which we denote pessimism. Pessimism therefore means use of negative tone beyond what would be expected given the firm's fundamentals (such as performance, risk or complexity). This focus on negative and pessimistic tone allows us to contribute to prior work, as the effects of negative disclosure are scarce (e.g., Huang et al., 2014b), as prior literature usually focuses on the strategic use of positive rather than negative disclosure (e.g., Huang et al., 2014a; Bochkay et al., 2018).

US companies experienced several waves of hostile takeovers in the early 1980s. At the time of this heightened takeover environment, many rules were enacted at the state and firm level. The main goal of these rules was to protect managers from unexpected takeovers. Antitakeover provisions have been widely studied by previous literature. Previous studies analyze how antitakeover provisions affect managerial preferences and corporate governance (Bertrand and Mullainathan, 1999; 2003), firm value (Gompers et al., 2003) or shareholder wealth (DeAngelo and Rice, 1983). However, to the best of our knowledge, there is no previous study analyzing whether managers use more negative tone in their disclosures when confront higher probability

of experiencing a hostile takeover. This is, whether managers use narrative disclosure to protect their companies from unwelcome bids. Takeover protection effectiveness depends not only on the type of protection adopted but also on the investors' view of firms' managers (Coates, 2000).

Understanding the consequences of higher probability of hostile takeovers and, thus, more antitakeover provisions (i.e., higher takeover protection) on narrative disclosure is important, as narratives are an efficient tool to disclose relevant information (Merkley, 2014) and have an impact on investors' decisions (Tetlock, 2007; Tetlock et al., 2008). Indeed, a growing literature shows that market participants consider not only firms' quantitative information but also its qualitative disclosures, and provides mounting evidence that narratives have economic consequences (Frazier et al., 1984; Gibbins et al., 1990; Tetlock, 2007; Tetlock et al., 2008; Feldman et al., 2010; Huang et al., 2014b). Companies disclosures are useful to stakeholders with different interests in the firm such as investors who want to discern their investment opportunities or financial analysts who issue their buy or sell recommendations. There is a debate in the literature about whether firms should issue accurate information to attract resource providers or whether issuing valuable information may attract rivals (Darrough and Stoughton, 1990; Verrechia, 1983) or potential acquirers.

Antitakeover provisions have the main goal of making the firm unattractive to potential unwelcome bidders. Some provisions such as *poison pills* or *pension parachutes* make the target less attractive to the acquirer. Other antitakeover provisions such as *fair price* or *silver parachutes* increase the acquisition price. *Director duties*, *unequal voting*, *supermajority*, *written consent*, *special meeting*, *black check* and *staggered boards* complicate that the bidder can acquire the control over the target company. Then, our main prediction is that a higher probability of confronting a hostile takeover is likely to increase the negative tone and pessimism

used by managers in their 10-K disclosures. More negative tone and pessimism in firms' narratives is likely to dissuade potential acquirers as the firm looks less attractive.

However, the opposite may be true. As the type of narratives used by firms in their 10-K reports affect their returns (Feldman et al., 2010), it could be that firms subject to higher probability of receiving a hostile takeover, do not use a more pessimistic disclosure tone because this is likely to impair the market's perception of the company. This would be detrimental for shareholders and, eventually, for managers who can be dismissed for bad firm's results.

To test our predictions, we use the Cain et al. (2017)'s takeover index which is referred as *Hostile Takeover* in our study. The authors construct the takeover index using first the state-level variation of takeover activity which is plausibly exogenous to discretional firm decisions. After analyzing which are the relevant takeover laws and court cases, they construct a firm-level index of hostile takeover susceptibility.[65] To measure negative tone, we use the Huang et al. (2014a) proxy of raw disclosure tone to construct our *Negative Tone* variable. The residual from the Huang et al. (2014a)'s model is our abnormal pessimistic disclosure variable (*Pessimism*).[66] Our sample ranges from 1994 to 2013.

We report the following key findings. First, we find that firms more susceptible to hostile takeovers have more negative and pessimistic tone in their 10-K reports. Additional analyses show that the main effect is located in the subsample of firms located in states that have enacted the Inevitable Disclosure Doctrine (IDD). We follow Dey and White (2019) who claim that firms headquartered in states with IDD have higher probability of being acquired. We also find that the

[65] The authors use 17 different takeover laws and court cases from year 1965 to 2014. To appease omitted variables concerns, their index is constructed using legal determinants as well as firms' characteristics such as aggregated capital liquidity and firm age. These firm characteristics are likely to affect the probability of receiving a hostile takeover bid but are not part of firms' discretionary decisions. We thank professor McKeon for making the index available at *http://pages.uoregon.edu/smckeon/*

[66] We multiply both raw and abnormal disclosure tone variables by -1 to have a direct measure of pessimistic and abnormal pessimistic tone in 10-Ks.

G-index from Gompers et al. (2003) and E-index from Bebchuk et al. (2009) have a positive relationship with negative tone and pessimism in firms' narratives. In addition, we show that firms with higher likelihood of having a hostile takeover bid that use more negative tone or pessimism in their disclosures are less likely to experience new acquisition threats. We also find that these firms show lower present and future prices. Finally, we show that hostile takeover susceptibility relates with lower present and future firm performance both in terms of returns. This is consistent with Cain et al. (2017) and Gompers et al. (2003) who show that antitakeover provisions relate with lower firm value which is in line with managerial entrenchment and agency costs. Also, these firms with higher probability of receiving hostile takeover bids engage in less accrual-based earnings management.

As robustness test, we use Constituency Statutes enactment as a plausible exogenous decrease in firms' need of internal antitakeover provisions. We find that firms incorporated in states that have enacted the Constituency Statutes (i.e., with less need for antitakeover protection) use less negative and pessimistic tone.

We contribute to prior work on firm-initiated takeover defenses by adding one defense mechanism through more negative disclosures. We also contribute to the literature on narratives and tone by looking at how narratives can be used to protect firms from unwelcome takeover bids. Most of previous literature focuses on positive tone and optimism in firms' narratives (e.g., Huang et al., 2014a). We offer a novel insight into cases where managers may opt for negative tone as a firm-initiated antitakeover defense which has not been explored in detail in prior research.

The remainder of Chapter 3 is structured as follows. Section 3.2 presents prior research and hypotheses, section 3.3 and 3.4 describe the methods, sample main results. Sections 3.5 and 3.6 present our additional analyses and robustness checks. Finally, section 3.7 concludes.

3.2. Prior Research and Hypothesis Development on Antitakeover Provisions and Narrative Disclosure

3.2.1. Antitakeover Provisions

Until the late 1960s, there was less need for antitakeover protection as most business combinations occurred after managers of both companies agreed on a friendly takeover (Weston et al., 2003). However, during the 1960s, most of the friendly business combinations were substituted by tender offers. Tender offers allow potential acquirers to make the offer directly to the shareholders of the target firm without considering managers' opinion. Some tender offers were friendly, but others were not accepted by managers of the target companies and involved hostility (Weston et al., 2003).[67]

During the early 1980s, there were several waves of hostile takeover offers in the U.S. even to the largest public companies (Gompers et al., 2003) which lead to companies implementing mechanisms for takeover defenses and restrictions to shareholder rights. Some of these antitakeover provisions increase the managers' ability to stop an undesired bid or create constraints for shareholders to meet or vote. In addition to internal antitakeover provisions, many states enacted antitakeover laws providing further external protection to companies (e.g., Business Combination Law or Constituency Statutes).

[67] The evolution of the takeover market generated a change in regulations. The 1968 Williams Act was created to amend the 1934 Securities Exchange Act and introduced provisions to make sure that both shareholders and managers have ex-ante information of a potential takeover bid, have time to evaluate it and the possibility of suing the bidder if it is considered necessary (Straska and Waller, 2014).

Antitakeover provisions represent a source of controversy among practitioners and researchers (Straska and Waller, 2014). The main concern is whether antitakeover provisions can have detrimental consequences for shareholders wealth and capital allocation in markets. Straska and Waller (2014) survey theoretical and empirical studies related to antitakeover provisions and their effect on shareholder value. The authors state that the opponents of antitakeover provisions argument that giving more power to managers may increase their entrenchment, worsening agency problems, which may have negative effects on shareholders' value (Macey, 1988). On the other hand, antitakeover provisions defendants claim that these provisions allow managers to negotiate in better terms during takeovers and eliminate short-term oriented managerial decisions which would improve future firm value.

Previous literature has extensively analyzed internal (i.e., firm-initiated antitakeover provisions) and external (i.e., state-initiated so they are state laws) antitakeover provisions. Gompers et al. (2003) develop an antitakeover index, the G-index, including 24 internal and external antitakeover provisions. In the same line, Bebchuk et al. (2009) analyze the relative importance of the 24 provisions included in the G- index and create an entrenchment index, the E-index, using 6 internal provisions (*staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes, and supermajority requirements for mergers* and *charter amendments*). Most of prior studies consider firms with higher antitakeover protection (i.e., higher values of the G-index or E-index), poor corporate governance firms. Some provisions aim to decrease the attractiveness of the target firm (e.g, *poison pills* or *pension parachutes*). Other provisions increase the price of the target company in case of acquisition (e.g., *fair price* or *silver parachutes*). Antitakeover provisions such as *director duties*, *unequal voting*, *supermajority*, *written consent*, *special meeting*, *black check* and *staggered boards* decrease the probability that

the potential acquirer can control the target firm. As example of external antitakeover provisions, *Business Combination laws* include a moratorium of 2 to 5 years for assets sales, mergers and 1other types of transactions between blockholders and other firms. This can change in case managers in the board approve the transaction. *Constituency Statutes* allow firms to consider the interests of both shareholders and non-financial stakeholders during takeover processes.[68]

An important number of previous studies have analyzed the consequences of the G-index and E-index in terms of returns (e.g., Gompers et al., 2003; Cremers et al., 2009), firm value (e.g., Bebchuk et al., 2009; Cremers and Ferrell, 2014), acquisition returns (Masulis et al., 2007) or takeover premiums (Sokolyk, 2011), among others. However, some studies criticize the use of these indexes as they could incorrectly measure takeover protection (Karpoff et al., 2016). The specific critics relate to the inclusion or exclusion of certain mechanisms, the equal weighting assigned to all the provisions and the potential measurement errors.[69] Other criticisms relate to endogeneity concerns (e.g., Core et al., 2006; Bhagat et al., 2008; Brickley and Zimmerman, 2010) as the implementation of internal antitakeover provisions is a discretional managers' decision.

Cain et al. (2017) create a takeover index analyzing 17 takeover laws and court cases and the hostile takeover hazard. They analyze these takeover laws for the period 1965 to 2014 and find that some of these laws such as poison pills or business combination laws have not a significant effect on hostile takeover activity. Other provisions such as fair price laws have effectively reduced hostile takeovers. To construct their index, the authors first focus on state-level variation in takeover activity and then create a firm-level index adding aggregated capital liquidity and

[68] For a complete definition of the different internal and external antitakeover provisions see Appendix 10 in Gompers et al. (2003).
[69] Some examples would be Cremers and Nair (2005), Brown and Caylor (2006), Romano et al. (2008) or Black et al. (2016).

firm age to decrease omitted variable concerns. Thus, their measure is plausible exogenous to discretionary firm decisions which differs from other measures such as G-index or E-index. The Cain et al. (2017) takeover index captures the hostile takeovers susceptibility of firms.

3.2.2. Narrative Disclosure

Prior research documents that corporate narratives are efficient channels to disclose information (Merkley, 2014) with economic consequences for the firm (Frazier et al., 1984; Gibbins et al., 1990; Tetlock, 2007; Tetlock et al., 2008; Feldman et al., 2010; Huang et al., 2014b). Narrative disclosure helps managers to convey firm-specific information about their firms to market participants. In this line, Merkley (2014) shows that narratives possess reliable information content. The author finds that managers adjust R&D disclosures considering earnings performance to provide relevant information and not to obfuscate the real firm performance. Previous literature provides evidence that firm-level heterogeneity exists along narrative dimensions such as financial statements readability (e.g. Li, 2008), or disclosure tone (Frazier et al., 1984; Feldman et al., 2010).

Firms disclosures can be informative of the real firm's situation in terms of performance (Grossman, 1981; Milgrom, 1981). However, managerial disclosure is a discretional managerial choice and, normally, it focuses on good news to affect stock prices in a favorably way and gives lower weight to negative news (Verrecchia, 1983; Dye, 1985). Previous studies such as Yermack (1997) or Aboody and Kasznik (2000) evidence that managers exploit their priviledged information for personal gain. There are studies analyzing the effect of negative tone on investors. In this line, Tetlock et al. (2008) analyze the effect on investors of negative words in firm-related news. In particular, the authors find that firms with more proportion of negative words in financial firms' news are more likely to show lower earnings. Huang et al. (2014b)

analyze analyst reports and find that investors react more strongly to negative than to positive narratives.

Thus, narrative disclosures have an important effect on investors and markets. However, there exists scarce literature on how negative tone in firms' 10-K disclosures can be used as a managerial strategy. Guo et al. (2017) show that firms with higher risk of competitors entry use more vague tone in their annual reports but, they do not analyze negative tone. Our argument is that the negative tone and pessimism in firms 10-K reports relate with a defense mechanism against potential unwelcome takeover bids. In this line, Fu and Liu (2017) find that firms with more antitakeover provisions (i.e., firms with higher takeover pressure) are more likely to issue management earnings forecast, specially those firms with negative earnigns information. The authors explain that firms with more antitakeover provisions do not have short-term pressures because their managers are less likely to be fired for takeover reasons.

3.2.3. Takeover Protection and Narrative Disclosure

The different antitakeover provisions, both internal (i.e., firm-initiated) and external (i.e., state-initiated), have the common characteristic of making the target company less attractive to potential acquirers. When companies have higher probability of experiencing a hostile takeover, it seems plausible that their main goal is to keep away unwelcome potential acquirers.

Previous literature shows that managers are willing to report, in general, good news and withhold bad news, such as dividend cuts, to avoid negative market reactions when they need positive market reactions (e.g., Lang and Lundholm, 2000; Kothari *et al*., 2009a; Ali *et al*., 2015; Campbell, 2018). However, considering that narrative disclosure tone has an important effect on investors, it is likely that managers are prone to use more negative or pessimistic tone in their 10-K reports to avoid hostile takeovers.

Negative and pessimistic tone may impair the market's view of the company but, it is important to consider that antitakeover provisions give managers more power within the firm (i.e., higher managerial entrenchment). Then, it is likely that managers are less affected by the potential detrimental effects on firms of negative and pessimistic tone. Previous studies argument that managers incentives to act depend on their losses and gains perceptions (e.g., Smith and Grimm, 1991; Smith et al., 1991). Then, managers are likely to use pessimistic tone if their perception of the benefits (i.e., avoid an unwelcome bid) surpasses the costs (i.e., potential detrimental effect on market perception of the firm). Regarding quantitative firms' strategies, McDonnell et al. (2019) show that firms subject to activist challenges engage in downward earnings management activities to reduce the audience's assessment of their performance. The main argument is that firms' outperformance can be interpreted as a signal that firms act in a dishonest way. Related to takeover literature, Servaes and Tamayo (2014) show that when a same-industry firm experiences a hostile takeover, other firms belonging to the same industry reduce capital expending and cash holdings and have larger leverage and shareholder payouts. The authors also find that these industry peers engage in more antitakeover provisions. Fu and Liu (2017) show that firms with more antitakeover provisions are more likely to engage in managerial earnings forecasts mainly when they have negative earnings. The authors explain that managers in firms with more antitakeover provisions are not short-term oriented, so they can concentrate their efforts in long-oriented strategies. This result may be also consistent with firms trying to protect themselves from unwelcome takeover bids showing their bad results which is likely to relate with more negative tone in disclosures. In this line, and regarding qualitative firms' strategies, Guo et al. (2017) show that firms use strategic narratives to avoid competitors' entries. In particular, the authors find that managers use more vagueness in their annual

disclosures to reduce potential entry firms' attention. Thus, we formulate the following hypothesis:

H: *Firms with higher probability of receiving a hostile takeover are likely to use more negative tone and pessimism in their narratives to protect the firm from unwelcome bidders.*

3.3. Empirical Constructs on Pessimism and Takeovers

We study the impact of hostile takeovers susceptibility on negative (*Negative Tone*) and pessimistic (*Pessimism*) disclosure tone in 10-K reports. To study whether managers use narratives to protect their companies from unwelcome bids, we propose the following model:

$$Negative\ Tone\ (Pessimism)_{it} = \alpha_s + \alpha_t + \beta\ Hostile\ Takeover_{it} + \gamma'\ X_{it} + \varepsilon_{it}, \quad (1)$$

where our dependent variable *Negative Tone* is measured following Huang et al. (2014a) as the level of *raw* disclosure tone in the 10-K reports (i.e., positive minus negative words scaled by total words) which are downloaded from EDGAR database and are parsed using a *php* algorithm. We multiply raw disclosure tone by -1 for the variable to have a direct relationship with pessimistic disclosure tone. We also use *Pessimism*, which is the residual from the Huang et al. (2014a) model multiplied by -1, as dependent variable. *Hostile Takeover* is the takeover index developed by Cain et al. (2017). The authors use a sample that ranges from 1965 to 2014 and include a full set of takeover laws and court cases. They apply the Akaike Information Criterion (AIC) to find which variables explain hostile takeover hazard. Once they have the model with the best AIC, the authors apply the estimated coefficients to construct their takeover index. In particular, the authors focus on state-level variation in takeover bids which is not very likely to be at the firm discretion. Then, they create a firm-level index adding aggregated capital liquidity and firm age to assuage potential omitted variable issues. In model (1), *i*, *t* and *s* are the firm, time and industry indicators. Industry (SIC-2) and year fixed effects represented by α_s and α_t,

respectively.[70] Following Cain et al. (2017), we do not use firm fixed effects in our main regressions.[71] The authors mention that the index is sticky over time and adding fixed effects may absorb the variation we are interested in analyzing. In this line, Cremers and Ferrell (2014) do not find statistically significant results when they add firm fixed effects in their G-index analysis. Following Huang et al. (2014a) we include the following control variables: *Earnings, Returns, Size, btm, Volatility Ret, Volatility Earn, Firm Age, Busseg*, *Geoseg, Loss, Earn change, afe* and *af.* All variables are defined in Appendix 10.

To construct the variable *Negative Tone,* we first need to calculate disclosure tone. For this, we examine 516,628,725 words containing 3,465,099 positive words and 7,595,709 negative words in a total of 30,122 10-K reports.[72] The parsing method for 10-Ks is described in Appendix 11. Negative disclosure tone (*Pessimism*) is measured as positive words minus negative words scaled by total words and expressed in percentage and multiplied by -1 to have a direct relationship with pessimism. We use the Loughran and McDonald word lists of positive and negative words created specifically for financial documents.[73] We use the 2014 updated version of their word list which contains 354 positive and 2,329 negative words (Loughran and McDonald, 2015). Their word list presents two important advantages. First, the list is more complete in terms of words included. Second, it is also customized to financial documents and

[70] If we use SIC-3 or SIC-4 our main results do not change.
[71] Cain et al. (2017) explain in page 481 that "*firm fixed effects can be problematic when the variables in the model are slow-moving…*".
[72] These filings include 10-K, 10-K405, 10-KSB and 10-KSB40. All the amended reports (/A) are not considered because we focus on the first version of the report.
[73] There exist other word lists in the accounting and finance literature: Harvard's General Inquirer (GI), Diction and the list developed by Henry (2008). However, these lists have some limitations such as not including relevant keywords common in financial reports (e.g. loss, impairment, adverse) which is the case of Henry´s (2008) list (Loughran and McDonald, 2016). Harvard GI and Diction word lists have been used in many studies as they were the first word lists publicly available, but they are not created specifically for financial documents.

specifically created from the 10-Ks making this list the most accurate to derive or proxy for managers' positive disclosure tone (Loughran and McDonald, 2016).

3.4. Sample and Results on Pessimism and Takeovers

We obtain financial and accounting data from Compustat and CRSP. Analysts data are obtained from IBES database. Merging these databases results in a total of 24,123 firm-year observations representing 2,157 US firms. We remove financial firms from the sample because their characteristics and disclosure tone differ from non-financial firms.[74] The final sample is comprised of 10,231 firm-year observations representing 1,241 non-financial firms between 1994 and 2013. Data for mergers and acquisitions is from Securities Data Company (SDC) Platinum database.

Table 1 presents the descriptive statistics of our main variables of interest. *Negative Tone* has a positive mean and median suggesting that managers in our sample use, on average, more negative disclosure tone in 10-K reports. *Pessimism* has a negative mean and median suggesting that, on average, mangers in our sample use less pessimistic tone in their 10-Ks. *Hostile Takeover* represents the firms' probability of receiving a hostile takeover and has a mean of 0.176 and a median of 0.148. Table 2 presents the Pearson correlation coefficients. *Hostile Takeover* has a positive and significant correlation with *Negative Tone*. Surprisingly, we find that the correlation between *Hostile Takeover* and *Pessimism* is negative and significant.

Table 3 Panel A shows the results for the main analysis. Columns (1), (2) and (3) show the relationship between *Hostile Takeover* and present and future *Negative Tone*. In every model, the *Hostile Takeover* coefficient is positive and statistically significant. Columns (4), (5) and (6)

[74] Some words such as *risk* and *casualty* have negative meaning in non-financial firms, but they might not be negative in the context of financial firms (Jegadeesh and Wu, 2013).

show the relationship between *Hostile Takeover* and present and future *Pessimism*. In every model, the *Hostile Takeover* coefficient is positive and statistically significant. These results confirm that firms with higher susceptibility to hostile takeovers use more negative and pessimistic disclosure tone in their 10-Ks. This is consistent with our argument that as narratives have an important effect on investors perception of the firm (Frazier et al., 1984; Gibbins et al., 1990; Tetlock, 2007; Tetlock et al., 2008; Feldman et al., 2010; Huang et al., 2014b), managers may use pessimistic disclosure tone to keep away unwelcome potential bidders. Thus, our hypothesis holds. Table 1 Panel B shows that managers use fewer positive words when they are more susceptible to hostile takeovers.[75]

3.5. Additional Analyses on Pessimism and Takeovers

Our main results should be stronger for the subsample of firms that are more attractive in terms of takeovers. In this line, Dey and White (2019) state that firms located in states that have enacted the IDD have higher probability of being acquired. This is in line with Chen et al. (2018) who find that IDD firms have higher probability of experiencing a takeover. IDD relates with trade secret protection regulations and emerge from a number of US court decisions. In firms located in states that have enacted the IDD, former employees cannot work for a competitor if the employee would inevitably need to use their trade secret knowledge in the rival company to correctly develop the job (Klasa et al., 2018; Li et al., 2018). Then, as IDD restricts competitors from acquiring private firm information from employees, it is likely that they try to obtain the trade secrets information by acquiring the firm (Tate and Yang, 2016). In addition, under IDD it

[75] Our main results remain unchanged if we control for CEO ability using the proxy developed by Demerjian et al. (2012). Untabulated results show that the coefficient for the CEO ability variable is positive but not significant.

is less likely that employees leave and transfer important firm information, so firms may increase organizational capital investment which would make the company more attractive to bidders.

Dey and White (2019) find that IDD relates with firms using more antitakeover provisions. We divide our sample in firms whose headquarter is in states that have enacted the IDD and firms headquartered in states without IDD.[76] Table 4 shows that the main effect of *Hostile Takeovers* on *Negative Tone* and *Pessimism* is for the subsample of firms with IDD (Columns 1 and 2). This is expected as firms with IDD are more attractive to potential acquirers.

Many previous studies have used the G-index (Gompers et al., 2003) and the E-index (Bebchuk et al., 2009) to account for antitakeover provisions (e.g., Cremers and Ferrell, 2014; Sokolyk, 2011; Cremers et al., 2009, Bebchuk et al., 2009; Masulis et al., 2007; Gompers et al., 2003). However, these measures have been widely criticized because every provision has the same weight, there could be measurement errors (e.g., Black et al., 2016; Romano et al., 2008; Brown and Caylor, 2006; Cremers and Nair, 2005) or endogeneity issues as internal antitakeover provisions represent managerial decisions (e.g., Core et al., 2006; Bhagat et al., 2008; Brickley and Zimmerman, 2010). As these indexes are constructed using antitakeover provisions which main goal is to make the firm unattractive to unwelcome bidders, they should relate with more negative tone in firm disclosures. Table 5 shows that both G-index and E-index have a positive and statistically significant relationship with present and future *Negative Tone* and *Pessimism*.

We also analyze whether the use of negative and pessimistic disclosure tone really protect firms from new takeover announcements. We use data from SDC database to obtain all the M&A announcements from 1993 to 2013. The dependent variable *Takeover threat* is a dummy variable

[76] Appendix 12 shows state and year of IDD enactment.

that equals one if the firm experiences a new acquisition announcement threat and zero otherwise. Correlation between *Negative Tone* and *Takeover* is negative (-0.033) and statistically significant (p-value<0.01). For *Pessimism*, the correlation with *Takeover* is positive but not statistically significant. Correlation between *Hostile Takeover* and *Takeover* is positive (0.067) and statistically significant (p-value<0.01).

Table 6 shows the results for this analysis. We find a negative and statistically significant coefficient for the interaction between *Negative Tone* and *Hostile Takeover* in Column (1). Columns (3) and (4) show that the interaction between *Pessimism* and *Hostile Takeover* is negative and statistically significant for current and future takeover threats. These results show that firms with higher probability of experiencing an unwelcome takeover bid that are more negative or pessimistic in their narratives, are less likely to experience a new takeover threat. As expected, a higher probability of experiencing a hostile takeover (*Hostile Takeover* variable) relates positively with having a new acquisition threat. However, we only find statistical significance in Column (1).

Untabulated results show that the relationship between the interactions *Negative Tone*Hostile Takeover* and *Pessimism*Hostile Takeover* and having a hostile takeover threat is negative is most of the models, but we do not find statistically significance. The number of observations drop as we do not have many hostile takeover announcements in our sample. In our sample there is a 24.2% of firms experiencing a new acquirement threat. But we find that only a 0.5% of those firms experience a new hostile acquirement threat. This lack of significance for hostile takeovers is in line with Cain et al. (2017) results. Thus, results in table 6 are in line with our argument that firms use negative and pessimistic tone in narratives as a defense mechanism against potential unwelcome takeover bids.

In addition, using CRSP delisting data due to merger-related issues, in untabulated results we find that firms with higher susceptibility to experience hostile takeovers that use more negative disclosure tone, are less likely to suffer a delisting because of merger-related situations. We find a negative but not significant coefficient for the relationship between firms' delisting given merger-related issues and the interaction between *Pessimism* and *Hostile Takeover*.

Previous literature argues that firms with higher probability of experiencing unwelcome takeover bids have higher incentives to maximize the firm's price, so they are more expensive for the potential acquirers (Macey, 1988). Using negative or pessimist disclosure tone in narratives is likely to impair market's assessment of firms' value which, in turn, would decrease firms' prices. Salva and Zhang (2017) argue that financial bidders are specialized in identifying mispriced firms to buy them and obtain positive future benefits. On the other hand, strategic acquirers would focus on takeovers that provide them with synergistic gains. It is fair to assume that both financial and strategic bidders look for good firms in the capital markets. Table 7 shows the relationship between negative and pessimistic disclosure tone and present and future firm's price. Results show that *Hostile Takeover* has a positive and statistically significant relationship with firm price. This is consistent with the idea that potential bidders are likely to look for good firms to buy. We also find that firms with higher susceptibility to hostile takeovers that use more negative or pessimistic disclosure tone present lower present and future price. This is consistent with the idea that disclosure tone has an effect on markets' perception of firm value. It is interesting to note that the coefficients for *Negative Tone* and *Pessimism* are not statistically significant. In addition, the coefficients sum of *Negative Tone*Hostile Takeover* and *Hostile Takeover* and the coefficients sum of *Negative Tone*Pessimism* and *Hostile Takeover* are not statistically significant. Our intuition is that though the use of negative or pessimistic narratives,

managers can convince potential unwelcome bidders that their firms does not represent a good investment.[77]

Previous literature analyzes the relationship between antitakeover provisions and firm performance. In particular, Cain et al. (2017) show that higher hostile takeover susceptibility relates with lower firm value. This result is also consistent with Gompers et al. (2003) who show that their antitakeover index (the G-index) has a negative relationship with firm performance. Table 8 shows that, consistent with Cain et al. (2017), *Hostile Takeover* relates with lower present and future firm returns. This would link with the idea that higher probability of hostile takeovers makes firms to increase the antitakeover provisions which increases managerial entrenchment having detrimental effects on firm performance. We find that firms that use more pessimistic narratives have a negative and significant relationship with current returns. This is consistent with the potential costs of engaging in negative disclosure strategies as markets may have a negatively value the firm. We do not find significant relationship for the interaction between *Negative Tone* (*Pessimism*) and *Hostile Takeover*.

Our main results show that firms more subject to hostile takeovers use more negative and pessimistic disclosure tone as qualitative strategy to protect the firm from unwanted takeovers. Higher protection against potential unwelcome bidders may decrease the importance of complying short-term goals and allow managers to concentrate on long-term issues. This situation is likely to decrease the need for accrual-based earnings management. Table 9 shows that *Hostile Takeovers* relate with lower accrual-based earnings management. Accrual earnings management are calculated following Jones (1991).[78] We find *Hostile Takeover* has a negative

[77] Untabulated results show that these results hold when the dependent variable is the target firm's price one day, one week or four weeks before the takeover deal.
[78] Using the modified Jones model (Dechow et al., 1995) to proxy for accrual earnings management, our main results do not change.

and statistically significant relationship with present and future accrual-based earnings management.[79] We do not find significant results for the interaction between *Negative Tone* (*Pessimism*) and *Hostile Takeover*.[80] Results in table 4 show that managers engage in less accrual-based activities when there is a higher probability of receiving an unwelcome bid. This is consistent with the idea that higher susceptibility to takeovers make firms to need more antitakeover provisions which, in turn, give more power to managers and decrease their need of meeting short-term goals. However, we do not find significant results for firms that use negative tone in hostile takeover environments.[81]

3.6. Robustness Checks on Pessimism and Takeovers

As robustness check, we use as a plausible exogenous decrease in firms' need of takeover protection, the Constituency Statutes enactment. Constituency Statutes allow directors to consider the effect of structural and operational decisions not only on shareholders, but also on the interests of non-financial stakeholders. Their passage has two related consequences: (1) they increase stakeholder-oriented practices (e.g., Flammer and Kacperczyk, 2016), and also, (2) they act as *de facto* antitakeover protection laws (e.g., Bisconti 2009). To the extent that these Statues reduce the need of firm-initiated defensive actions and improve investment in socially responsible initiatives, we predict that they will lead to less negative and pessimistic disclosure tone. Although Constituency Statutes are not simple antitakeover provisions (as they protect *all* stakeholders),[82] these laws act as external antitakeover protection.

[79] We do not find conclusive results for real earnings management. If we use Zang (2012) to proxy for real earnings management (abnormal production minus abnormal discretionary expenses) we find that *Hostile Takeover* has a positive and significant relationship with real earnings management at time t. However, if we use the Roychowdhury (2006) proxy for real earnings management we do not find significant results.
[80] Untabulated results show that we do not find significant results for abnormal pessimistic disclosure tone nor for the interaction between *Abn. Pessimism* and *Hostile Takeover*.
[81] Untabulated results show that we do not find significant results for pessimism.
[82] Although the nature of most Statutes is permissive (Bainbridge, 1992), they are legally enforceable and different with respect to the traditional shareholder primacy view (Orts, 1992; Stout, 2012). The legal enforceability of the

We follow studies such as Flammer and Kacperczyk (2016) or Gao et al. (2018), and exploit the quasi-natural experiment provided by the staggered enactment of Constituency Statutes in U.S. Table 10 shows the results. *Constituency Statutes* is a dummy variable that equals 1 for firms incorporated in states that have enacted the Statutes (treated firms) and 0 otherwise (control firms).[83] We control for E-index (Columns 1 and 3) and for G-index (Columns 2 and 4) to account for other internal and external antitakeover provisions that could be affecting firms' narratives. Results in Table 10 show that the coefficient for *Constituency Statutes* is negative and statistically significant. This shows that firms with lower need to protect themselves use a less negative and pessimistic tone in their 10-K reports.

Finally, one potential concern could be that firms with higher levels of negative tone and pessimism in their disclosures attract potential acquirers. This is because firms more susceptible to hostile takeover bids with more negative or pessimistic disclosure tone have lower prices. This would relate with a reverse causality issue where pessimism would determine firms' propensity to hostile takeovers. To deal with this issue, we perform the Granger Causality test. Untabulated results show that negative tone and pessimism in previous periods are neither positive nor significantly related to firms' susceptibility to a hostile takeover.

3.7. Summary and Conclusions Chapter 3

We analyze whether firms that are more likely to experience unwelcome takeover bids use negative and pessimistic disclosure tone as a mechanism defense against those potential acquirers. To proxy for firms' susceptibility to hostile takeovers we use the Cain et al. (2017)

Statutes has been shown in real business cases. For example, in a federal bankruptcy case, *In re McCalla Interiors, Inc., 228 B.R. 657 (United States Bankruptcy Court, N.D. Ohio 1998)*, the Court explicitly alluded the Ohio Constituency Statutes to defend the employees' and customers' interests.

[83] Appendix 13 shows state and year of Constituency Statutes enactment.

measure that contains takeover laws and court cases as well as firm characteristics such as aggregated capital liquidity and firm age. As these elements are not likely to be at the managerial discretion, the Cain et al. (2017) proxy provides a plausible exogenous measure for firms' propensity to hostile takeovers. In particular, we find that firms with higher probability of experiencing an unwelcome takeover use more negative and pessimistic disclosure tone in their 10-K reports.

We also find that our main results are mainly located in the subsample of firms that are more attractive for potential acquirers (i.e., firms located in states that have enacted the IDD). Also, firms in hostile takeovers environments that use more negative and pessimistic tone in their disclosures are less related with new takeover announcements. This is in line with our argument that pessimistic disclosure is used by firms as a defense mechanism against unwelcome takeover bids. Our results also show that these firms with higher propensity to unwelcome takeovers that use negative or pessimistic disclosure tone have lower prices. Finally, we find that the propensity to hostile takeovers relate with lower accrual-based earnings management activities and lower firm performance in terms of lower returns.

Our results are robust to the use of Constituency Statutes as an exogenous decrease in firms' need of internal antitakeover provisions. Additionally, using the Granger Causality test, we find that previous negative or pessimistic disclosure tone is not related in a statistically significant way with firms' propensity to hostile takeovers.

Our study contributes to previous literature on negative narrative disclosure as most of previous studies focus on positive or optimistic disclosure tone. We also contribute to previous narrative disclosure literature showing that managers in firms more subject to unwelcome bids disclose more pessimistic narratives to protect the firm form potential acquirers.

3.8. Appendices Chapter 3

Appendix 10 Variables Definition

VARIABLES	DEFINITION	SOURCE
Negative Tone	Disclosure tone calculated as the difference between positive words and negative words scaled by total number of words in each firm-year 10-K report and expressed in percentage. It is multiplied by -1 to have a direct relationship with pessimistic tone.	Loughran and McDonald word list and *php algorithm*
Pessimism	Abnormal pessimism disclosure calculated as the residual of the model from Huang et al. (2014a). It is multiplied by 100 to ease interpretation. It is multiplied by -1 to have a direct relationship with abnormal pessimistic tone.	Loughran and McDonald word list, *php algorithm*, COMPUSTAT, CRSP, IBES.
Hostile Takeover	The takeover propensity index is calculated as the probability for a firm of suffering a hostile takeover considering 17 different antitakeover provisions and several firm-specific characteristics (capital liquidity and firm age).	*http://pages.uoregon.edu/smckeon/*
Positive Words	Count of the total number of positive words in each firm-year 10-K filing.	Loughran and McDonald word list and *php algorithm*
Negative Words	Count of the total number of negative words in each firm-year 10-K filing.	Loughran and McDonald word list and *php algorithm*
Total Words	Count of the total number of words in each firm-year 10-K filing.	Loughran and McDonald word list and *php algorithm*
Accrual EM	Accrual-based earnings management calculated as the absolute value of the residual of the model created by Jones (1991).	COMPUSTAT and Jones (1991)
Constituency Statutes	Indicator variable that equals 1 if the company is incorporated in a state that has enacted the constituency statutes by year t and later and 0 otherwise.	Karpoff and Wittry (2018)
E-index	Index of internal antitakeover firm's provisions.	Bebchuk et al. (2008) and RiskMetrics
G-index	Index of internal and external antitakeover firm's provisions. In its calculation, we do not add the external antitakeover provisions considered by Gompers et al. (2003).	Gompers et al. (2003) and RiskMetrics
Takeover threat	Indicator variable that equals 1 if the firm experiences a new acquisition threat (using the announcement date) and 0 otherwise.	SDC Platinum
Earnings	Earnings before extraordinary items.	COMPUSTAT
Returns	Contemporaneous annual stock returns calculated using CRSP monthly return data.	CRSP
Size	Logarithm of firm market value.	COMPUSTAT
btm	Book-to-market ratio.	COMPUSTAT
Volatility Ret	Standard deviation of stock returns over the last five fiscal years.	CRSP
Volatility Earn	Standard deviation of earnings over the last five fiscal years.	COMPUSTAT

VARIABLES	DEFINITION	SOURCE
Firm Age	Logarithm of 1 plus the firm age calculated from the first year the firm entered the CRSP dataset.	COMPUSTAT
Busseg	Logarithm of 1 plus the number of business segments, or 1 if the value is missing form Compustat.	COMPUSTAT
Geoseg	Logarithm of 1 plus the number of geographic segments, or 1 if the value is missing form Compustat.	COMPUSTAT
Loss	It is an indicator variable that equals 1 if earnings before extraordinary items are negative and 0 otherwise.	COMPUSTAT
Earn change	Difference between earnings before extraordinary items in period t versus period t-1 scaled by total assets.	COMPUSTAT
afe	Analyst forecast error, defined as IBES earnings per share minus the median of the most recent analysts' forecasts, deflated by stock price per share at the end of the fiscal year.	IBES
af	Analyst consensus forecast for one-year-ahead earnings per share scaled by stock price per share at the end of the fiscal year to control for managerial assessment about future performance.	IBES

Appendix 11 Cleaning 10-K Reports

The first step is obtaining the 10-K filings. We download them from SEC's Electronic Data Gathering, Analysis and Retrieval (EDGAR). We use a customized web crawling algorithm created with *php* programming language. The types of 10-K reports downloaded are the following: 10-K, 10-K405, 10-KSB and 10-KSB40.

We realized that several filings contain little or none information before year 1996. After contacting directly with the SEC, we received this information: "*not all documents filed with the Commission by public companies will be available on EDGAR. Companies were phased into EDGAR filing over a three-year period, ending May 6, 1996. As of that date, all public domestic companies were required to make their filings on EDGAR, except for filings made in paper because of a hardship exemption. Third-party filings with respect to these companies, such as tender offers and Schedules 13D, are also filed on EDGAR.* More information appears in *https://www.sec.gov/edgar/aboutedgar.htm*. We remove those filings that appear empty or with scarce information.

After downloading all the 10-Ks filings corresponding to firms in our database, we go through the following steps:

1) Clean all filings by removing every HTML tags.
2) Exclude the filer's name, CIK number and firm address. This is, we exclude the cover page (the *header*).
3) Remove all the tables and exhibits because these items are more likely to contain template language that is less meaningful to measure disclosure tone (Loughran and McDonald, 2011).
4) Our algorithm eliminates *capital letters* (command *ignore case*).
5) We do not eliminate *the stop words* as they should be part of the number of total words of each 10-K.
6) Our algorithm eliminates the *punctuation*. For example, the set of words '*increase. The'* is equivalent to *increase* and *the* without considering punctuation or capital letters. This can be achieved using the *regular* expressions existing in *php* programming language. A regular expression, also known as *regex*, is a sequence of characters that forms a search pattern. Regular expressions consist of constants and operator symbols that denote sets of strings and operations over these sets, respectively.

Appendix 12 Inevitable Disclosure Doctrine Enactment

State	Precedent-Setting Case(s)	Date	Decision
Arkansas	Southwestern Energy Co. v. Eickenhorst, 955 F. Supp. 1078 (W.D. Ark. 1997)	3/18/1997	Adopt
Connecticut	Branson Ultrasonics Corp. v. Stratman, 921 F. Supp. 909 (D. Conn. 1996)	2/28/1996	Adopt
Delaware	E.I. duPont de Nemours & Co. v. American Potash & Chem. Corp., 200 A.2d 428 (Del. Ch. 1964)	05/05/1964	Adopt
Florida	Fountain v. Hudson Cush-N-Foam Corp., 122 So. 2d 232 (Fla. Dist. Ct. App. 1960)	07/11/1960	Adopt
	Del Monte Fresh Produce Co. v. Dole Food Co. Inc., 148 F. Supp. 2d 1326 (S.D. Fla. 2001)	5/21/2001	Reject
Georgia	Essex Group Inc. v. Southwire Co., 501 S.E.2d 501 (Ga. 1998)	6/29/1998	Adopt
Illinois	Teradyne Inc. v. Clear Communications Corp., 707 F. Supp. 353 (N.D. 111. 1989)	02/09/1989	Adopt
Indiana	Ackerman v. Kimball Intl Inc., 652 N.E.2d 507 (Ind. 1995)	07/12/1995	Adopt
Iowa	Uncle Bs Bakery v. ORourke, 920 F. Supp. 1405 (N.D. Iowa 1996)	04/01/1996	Adopt
Kansas	Bradbury Co. v. Teissier-duCros, 413 F. Supp. 2d 1203 (D. Kan. 2006)	02/02/2006	Adopt
Massachusetts	Bard v. Intoccia, 1994 U.S. Dist. LEXIS 15368 (D. Mass. 1994)	10/13/1994	Adopt
Michigan	Allis-Chalmers Manuf. Co. v. Continental Aviation & Eng. Corp., 255 F. Supp. 645 (E.D. Mich. 1966)	2/17/1966	Adopt
	CMI Intl, Inc. v. Intermet Intl Corp., 649 N.W.2d 808 (Mich. Ct. App. 2002)	4/30/2002	Reject
Minnesota	Surgidev Corp. v. Eye Technology Inc., 648 F. Supp. 661 (D. Minn. 1986)	10/10/1986	Adopt
Missouri	H&R Block Eastern Tax Servs. Inc. v. Enchura, 122 F. Supp. 2d 1067 (W.D. Mo. 2000)	11/02/2000	Adopt
New Jersey	Natl Starch & Chem. Corp. v. Parker Chem. Corp., 530 A.2d 31 (N.J. Super. Ct. 1987)	4/27/1987	Adopt
New York	Eastman Kodak Co. v. Powers Film Prod., 189 A.D. 556 (N.Y.A.D. 1919)	12/05/1919	Adopt
North Carolina	Travenol Laboratories Inc. v. Turner, 228 S.E.2d 478 (N.C. Ct. App. 1976)	6/17/1976	Adopt
Ohio	Procter & Gamble Co. v. Stoneham, 747 N.E.2d 268 (Ohio Ct. App. 2000)	9/29/2000	Adopt
Pennsylvania	Air Products & Chemical Inc. v. Johnson, 442 A.2d 1114 (Pa. Super. Ct. 1982)	2/19/1982	Adopt
Texas	Rugen v. Interactive Business Systems Inc., 864 S.W.2d 548 (Tex. App. 1993)	5/28/1993	Adopt
	Cardinal Health Sta_ng Network Inc. v. Bowen, 106 S.W.3d 230 (Tex. App. 2003)	04/03/2003	Reject
Utah	Novell Inc. v. Timpanogos Research Group Inc., 46 U.S.P.Q.2d 1197 (Utah D.C. 1998)	1/30/1998	Adopt
Washington	Solutec Corp. Inc. v. Agnew, 88 Wash. App. 1067 (Wash. Ct. App. 1997) Adopt	12/30/1997	Adopt

This table lists a setting of previous legal cases where US state courts decided to adopt the Inevitable Disclosure Doctrine (IDD). There are also three cases (Florida, Michigan and Texas) in which courts rejected IDD after adopting it.
Source: Klasa et al. (2018).

Appendix 13 Constituency Statutes Enactment

State	Year
Arizona	1987
Connecticut	1988
Florida	1989
Georgia	1989
Hawaii	1989
Idaho	1988
Illinois	1985
Indiana	1986
Iowa	1989
Kentucky	1988
Louisiana	1988
Maine	1985
Maryland	1999
Massachusetts	1989
Minnesota	1987
Mississippi	1990
Missouri	1986
Nebraska	1988
Nevada	1991
New Jersey	1989
New Mexico	1987
New York	1987
North Carolina	1993
North Dakota	1993
Ohio	1984
Oregon	1989
Pennsylvania	1990
Rhode Island	1990
South Dakota	1990
Tennessee	1988
Texas	2003
Vermont	1998
Virginia	1988
Wisconsin	1987
Wyoming	1990

Source: Karpoff and Wittry (2018)

3.9. Tables and Figures Chapter 3

Table 1 Descriptive statistics

	N	Mean	STD	Min	Q1	Median	Q3	Max
Negative Tone	10,231	0.645	0.529	-2.229	0.267	0.628	0.981	4.596
Pessimism	10,231	-0.039	0.457	-2.607	-0.331	-0.063	0.220	3.741
Hostile Takeover	10,231	0.176	0.097	0.020	0.099	0.148	0.246	0.427
Positive Words	10,231	202	146	0	82	183	291	1,714
Negative Words	10,231	432	373	0	128	346	644	5,029
Total Words	10,231	29,008	21,126	92	13,244	26,522	40,502	464,821
Accrual EM	10,158	0.084	0.080	0.000	0.027	0.059	0.114	0.395
Real EM	9,524	0.052	0.422	-2.745	0.142	0.063	0.298	2.020
Constituency Statutes	10,231	0.311	0.463	0	0	0	1	1
E-index	8	2	2	0	1	2	4	6
G-index	8	4	3	0	2	4	6	15
Earnings	10,231	0.044	0.100	-1.308	0.019	0.051	0.087	1.247
Returns	10,231	0.012	0.035	-0.072	-0.008	0.012	0.033	0.086
Size	10,231	7.538	1.641	3.513	6.337	7.488	8.700	10.954
btm	10,231	0.479	0.672	0.000	0.166	0.330	0.586	18.373
Volatility Ret	10,231	0.122	0.067	0.041	0.074	0.104	0.148	0.361
Volatility Earn	10,231	0.049	0.051	0.002	0.016	0.029	0.061	0.200
Firm Age	10,231	2.479	0.484	0	2.197	2.565	2.833	3.258
Busseg	10,231	1.067	0.375	0	1	1	1	3.401
Geoseg	10,231	1.122	0.448	0	1	1	1	4.060
Loss	10,231	0.177	0.381	0	0	0	0	1
Earn change	10,231	-0.004	0.065	-0.248	-0.022	0.000	0.018	0.236
afe	10,231	-0.009	0.037	-1.107	-0.006	0.000	0.002	0.409
af	10,231	0.057	0.068	-0.084	0.029	0.049	0.071	1.955

The sample comprises 10,231 firm-year observations for the period 1994-2013. All variables are defined Appendix 10.

Table 2 Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Negative Tone	**1**										
(2) Pessimism	**0.841**	**1**									
(3) Hostile Takeover	*-0.024*	*0.024*	**1**								
(4) Positive Words	**0.346**	**0.039**	**-0.085**	**1**							
(5) Negative Words	**0.672**	**0.379**	**-0.082**	**0.865**	**1**						
(6) Total Words	**0.388**	**0.112**	**-0.066**	**0.835**	**0.824**	**1**					
(7) Accrual EM	**0.058**	0.008	**-0.119**	**0.075**	**0.066**	**0.050**	**1**				
(8) Real EM	**0.033**	*0.026*	**0.059**	0.020	**0.034**	**0.030**	**0.066**	**1**			
(9) Constituency Statutes	**-0.111**	**-0.071**	**-0.094**	**-0.087**	**-0.123**	**-0.098**	*-0.022*	**0.037**	**1**		
(10) E-index	**0.178**	0.010	**0.047**	**0.340**	**0.320**	**0.284**	0.000	**0.057**	**0.053**	**1**	
(11) G-index	-0.002	-0.007	**0.114**	0.016	-0.001	-0.001	0.010	*0.027*	0.008	**0.370**	**1**

The sample comprises 10,231 firm-year observations for the period 1994-2013. The table shows the Pearson correlation coefficients. Bold numbers indicate statistical significance at 1%, italic numbers indicate significance at 5%. All variables are defined Appendix 10. All the continuous variables are winsorized at the 1% and 99% to mitigate the effect of outliers.

Table 3 Hostile takeover and pessimistic disclosure tone

PANEL A: Hostile takeover, negative and pessimistic disclosure tone						
	(1) Negative Tone	(2) Negative $Tone_{t+1}$	(3) Negative $Tone_{t+2}$	(4) Pessimism	(5) $Pessimism_{t+1}$	(6) $Pessimism_{t+2}$
Hostile Takeover	0.409***	0.353**	0.308**	0.334**	0.278*	0.255*
	(2.875)	(2.475)	(2.120)	(2.346)	(1.920)	(1.727)
Earnings	-0.502***	-0.659***	-0.590***	0.193	0.140	-0.015
	(-4.362)	(-4.867)	(-4.283)	(1.556)	(0.976)	(-0.103)
Returns	0.002	-0.710***	-1.064***	-0.397**	-0.200	-0.715***
	(0.013)	(-4.246)	(-6.415)	(-2.481)	(-1.072)	(-3.698)
Size	0.019**	0.028***	0.030***	-0.019**	-0.005	0.000
	(2.201)	(3.163)	(3.258)	(-2.142)	(-0.573)	(0.012)
btm	0.042***	0.051***	0.071***	-0.032	-0.022	-0.013
	(2.598)	(2.979)	(3.487)	(-1.643)	(-1.148)	(-0.633)
Volatility Ret	0.490***	0.752***	0.989***	0.227*	0.349***	0.492***
	(3.993)	(5.849)	(7.508)	(1.765)	(2.610)	(3.738)
Volatility Earn	1.996***	1.585***	1.343***	-0.029	-0.087	0.070
	(10.646)	(8.231)	(6.511)	(-0.152)	(-0.430)	(0.319)
Firm Age	-0.013	-0.021	-0.016	0.005	0.006	0.011
	(-0.491)	(-0.782)	(-0.560)	(0.198)	(0.225)	(0.398)
Busseg	-0.030	-0.030	-0.034	-0.018	-0.010	-0.005
	(-1.600)	(-1.368)	(-1.320)	(-0.930)	(-0.419)	(-0.161)
Geoseg	-0.029	-0.045*	-0.056*	0.016	0.011	0.000
	(-1.344)	(-1.798)	(-1.914)	(0.712)	(0.436)	(0.002)
Loss	0.131***	0.176***	0.159***	0.045**	0.138***	0.112***
	(6.540)	(8.234)	(7.011)	(2.167)	(6.111)	(4.666)
Earn change	0.823***	0.538***	0.336***	0.476***	0.480***	0.206*
	(8.199)	(5.433)	(3.176)	(4.411)	(4.543)	(1.773)
afe	-0.330*	-0.503***	-0.323**	0.241	-0.126	-0.100
	(-1.945)	(-2.959)	(-1.966)	(1.074)	(-0.611)	(-0.450)
af	0.006	0.329*	0.407**	-0.171	0.083	0.120
	(0.048)	(1.906)	(2.322)	(-1.252)	(0.385)	(0.462)
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	10,231	9,552	8,822	10,231	9,361	8,577
Adj. R-sqr.	0.372	0.380	0.369	0.130	0.132	0.132

PANEL B: Hostile takeover, negative and positive words				
	(1)	(2)	(3)	(4)
	Positive Words	Positive Words$_{t+1}$	Negative Words	Negative Words$_{t+1}$
Hostile Takeover	-1.319***	-1.467***	-0.555	-0.661
	(-3.104)	(-3.147)	(-1.259)	(-1.357)
Controls	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	10,130	9,439	10,130	9,439
Adj. R-sqr.	0.816	0.816	0.835	0.836

The sample comprises 10,231 firm-year observations for the period 1994-2013. Panel A shows the relationship between *Hostile Takeover*, pessimistic and abnormal pessimistic disclosure tone. Panel B shows the relationship between *Hostile Takeover*, *Positive Words* and *Negative Words*. For the sake of interpretation, *Positive Words* is the natural logarithm of 1 plus total number of positive words in each 10-K report. *Negative Words* is the natural logarithm of 1 plus total number of negative words in each 10-K report. Models are estimated using industry (SIC-2) and year fixed effects. Standard errors are clustered by firm and t-statistics are in parenthesis. All variables are defined in Appendix 10. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance levels at the 1%, 5%, and 10 % levels, respectively.

Table 4 Hostile takeover and disclosure tone by IDD subsamples

	Firms with IDD		*Firms without IDD*	
	(1)	(2)	(3)	(4)
	Negative Tone	Pessimism	Negative Tone	Pessimism
Hostile Takeover	0.476***	0.405**	0.371*	0.313
	(2.756)	(2.337)	(1.759)	(1.477)
Earnings	-0.541***	0.083	-0.423***	0.344**
	(-3.273)	(0.451)	(-2.953)	(2.309)
Returns	0.083	-0.286	-0.020	-0.453**
	(0.377)	(-1.241)	(-0.102)	(-2.201)
Size	0.012	-0.029**	0.023*	-0.013
	(1.113)	(-2.533)	(1.928)	(-1.025)
btm	0.032*	-0.042*	0.057***	-0.018
	(1.751)	(-1.809)	(2.676)	(-0.689)
Volatility Ret	0.419***	0.136	0.467**	0.196
	(2.787)	(0.860)	(2.502)	(1.002)
Volatility Earn	1.878***	-0.191	2.088***	0.097
	(6.924)	(-0.694)	(8.078)	(0.365)
Firm Age	-0.015	-0.001	-0.007	0.008
	(-0.415)	(-0.015)	(-0.209)	(0.222)
Busseg	-0.047*	-0.031	-0.030	-0.021
	(-1.688)	(-1.085)	(-1.110)	(-0.784)
Geoseg	-0.028	0.010	-0.014	0.037
	(-0.908)	(0.331)	(-0.511)	(1.341)
Loss	0.101***	0.014	0.161***	0.074***
	(3.631)	(0.478)	(5.879)	(2.620)
Earn change	0.738***	0.418***	0.894***	0.516***
	(5.080)	(2.726)	(7.000)	(3.716)
afe	-0.615***	-0.028	-0.098	0.443**
	(-3.004)	(-0.080)	(-0.453)	(1.968)
af	0.082	-0.120	-0.067	-0.226
	(0.631)	(-0.774)	(-0.394)	(-1.277)
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	5,508	5,508	4,695	4,695
Adj. R-sqr.	0.340	0.107	0.433	0.199

The sample comprises 5,508 firm-year observations for the period 1994-2013. This table shows the relationship between *Hostile Takeover* and pessimistic disclosure tone by subsamples of firms located in states with and without IDD. Models are estimated using industry (SIC-2) and year fixed effects. Standard errors are clustered by firm and t-statistics are in parenthesis. All variables are defined in Appendix 10. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance levels at the 1%, 5%, and 10 % levels, respectively.

Table 5 Antitakeover provisions and disclosure tone

	(1) Negative Tone	(2) Negative $Tone_{t+1}$	(3) Negative Tone	(4) Negative $Tone_{t+1}$	(5) Pessimism	(6) $Pessimism_{t+1}$	(7) Pessimism	(8) $Pessimism_{t+1}$
E-index	0.020**	0.021**			0.018*	0.016*		
	(2.166)	(2.184)			(1.904)	(1.675)		
G-index			0.007**	0.005**			0.006**	0.004
			(2.365)	(2.044)			(2.198)	(1.320)
Earnings	-0.644***	-1.022***	-0.642***	-1.022***	0.120	-0.434***	0.122	-0.434***
	(-5.036)	(-6.934)	(-5.007)	(-6.903)	(0.974)	(-2.670)	(0.990)	(-2.664)
Returns	0.623***	0.093	0.631***	0.101	0.188	0.538***	0.195	0.542***
	(4.350)	(0.648)	(4.408)	(0.700)	(1.274)	(3.670)	(1.320)	(3.702)
Size	-0.102***	-0.080***	-0.103***	-0.080***	-0.139***	-0.086***	-0.140***	-0.087***
	(-6.126)	(-4.747)	(-6.186)	(-4.778)	(-7.727)	(-4.671)	(-7.779)	(-4.687)
btm	0.004	0.010	0.004	0.010	-0.070***	-0.039	-0.070***	-0.039
	(0.376)	(0.720)	(0.369)	(0.723)	(-2.967)	(-1.522)	(-2.963)	(-1.516)
Volatility Ret	-0.050	0.212*	-0.056	0.205*	-0.390***	-0.030	-0.394***	-0.035
	(-0.438)	(1.833)	(-0.484)	(1.769)	(-3.327)	(-0.246)	(-3.363)	(-0.292)
Volatility Earn	1.019***	0.373*	1.021***	0.376*	-1.047***	-0.861***	-1.045***	-0.857***
	(4.768)	(1.763)	(4.761)	(1.767)	(-4.742)	(-3.848)	(-4.719)	(-3.814)
Firm Age	0.102	0.043	0.097	0.041	-0.036	-0.068	-0.042	-0.069
	(1.434)	(0.587)	(1.360)	(0.553)	(-0.501)	(-0.876)	(-0.583)	(-0.890)
Busseg	-0.028	-0.021	-0.027	-0.019	-0.020	-0.006	-0.018	-0.005
	(-1.373)	(-0.977)	(-1.276)	(-0.881)	(-0.936)	(-0.258)	(-0.853)	(-0.195)
Geoseg	0.020	0.018	0.019	0.017	0.058***	0.074***	0.058***	0.074***
	(0.950)	(0.827)	(0.914)	(0.788)	(2.836)	(3.338)	(2.795)	(3.296)
Loss	0.066***	0.117***	0.065***	0.117***	-0.015	0.094***	-0.015	0.094***
	(4.275)	(6.705)	(4.252)	(6.665)	(-0.975)	(4.985)	(-0.991)	(4.961)
Earn change	0.928***	0.797***	0.930***	0.796***	0.683***	0.761***	0.685***	0.761***
	(9.657)	(8.753)	(9.632)	(8.713)	(6.716)	(7.736)	(6.695)	(7.712)
afe	-0.509***	-0.463**	-0.501***	-0.453**	-0.007	-0.149	0.000	-0.142
	(-2.716)	(-2.392)	(-2.699)	(-2.350)	(-0.034)	(-0.689)	(0.000)	(-0.658)
af	-0.181**	0.329***	-0.178**	0.333***	-0.314***	0.074	-0.311***	0.077
	(-2.365)	(3.460)	(-2.305)	(3.490)	(-3.834)	(0.667)	(-3.779)	(0.697)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Observations	8,870	8,156	8,870	8,156	8,870	8,038	8,870	8,038
Adj. R-sqr.	0.693	0.700	0.693	0.700	0.586	0.581	0.585	0.581

The sample comprises 8,870 firm-year observations for the period 1994-2013. Models are estimated using firm and year fixed effects. Standard errors are clustered by firm and t-statistics are in parenthesis. All variables are defined in Appendix 10. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance levels at the 1%, 5%, and 10 % levels, respectively.

Table 6 Negative and pessimistic disclosure tone and takeover threat

	(1) Takeover threat	(2) Takeover $threat_{t+1}$	(3) Takeover threat	(4) Takeover $threat_{t+1}$
Negative Tone*Hostile Takeover	-0.236**	-0.148		
	(-2.322)	(-1.475)		
Negative Tone	0.057***	0.044**		
	(2.993)	(2.213)		
Pessimism*Hostile Takeover			-0.240**	-0.201*
			(-2.053)	(-1.779)
Pessimism			0.058***	0.055**
			(2.731)	(2.471)
Hostile Takeover	0.208**	0.108	0.060	0.015
	(2.110)	(1.078)	(0.844)	(0.200)
Earnings	0.171**	0.078	0.150**	0.054
	(2.359)	(0.940)	(2.074)	(0.655)
Returns	-0.953***	-0.233	-0.945***	-0.223
	(-6.666)	(-1.518)	(-6.606)	(-1.456)
Size	0.031***	0.032***	0.031***	0.033***
	(7.025)	(7.226)	(7.224)	(7.451)
btm	0.007	0.009	0.008	0.009
	(0.929)	(1.115)	(1.077)	(1.234)
Volatility Ret	0.069	-0.253***	0.064	-0.254***
	(0.784)	(-2.840)	(0.733)	(-2.850)
Volatility Earn	0.104	0.122	0.152	0.170
	(0.961)	(1.078)	(1.447)	(1.554)
Firm Age	0.033**	0.013	0.030**	0.011
	(2.568)	(0.942)	(2.329)	(0.801)
Busseg	0.017	0.016	0.016	0.016
	(1.197)	(1.028)	(1.146)	(0.993)
Geoseg	-0.017	0.006	-0.019	0.004
	(-1.304)	(0.364)	(-1.402)	(0.274)
Loss	-0.018	-0.007	-0.016	-0.006
	(-1.223)	(-0.437)	(-1.114)	(-0.347)
Earn change	0.045	0.091	0.059	0.104
	(0.533)	(1.063)	(0.694)	(1.214)
afe	-0.032	-0.077	-0.046	-0.088
	(-0.245)	(-0.481)	(-0.343)	(-0.550)
af	0.123*	0.111	0.130*	0.118
	(1.702)	(1.280)	(1.789)	(1.355)
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	10,231	9,161	10,231	9,161
Adj. R-sqr.	0.065	0.065	0.065	0.065

The sample comprises 10,231 firm-year observations for the period 1994-2013. Models are estimated using industry (SIC-2) and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All variables are defined in Appendix 10. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance levels at the 1%, 5%, and 10 % levels, respectively.

Table 7 Hostile takeover, disclosure tone and price

		(1) Price	(2) $Price_{t+1}$	(3) Price	(4) $Price_{t+1}$
Negative Tone*Hostile Takeover	β_1	-12.762***	-12.829**		
		(-2.665)	(-2.398)		
Negative Tone	β_2	-1.329	-0.935		
		(-1.316)	(-0.815)		
Pessimism*Hostile Takeover	β_3			-9.290*	-11.752**
				(-1.785)	(-2.019)
Pessimism	β_4			-1.649	-0.932
				(-1.573)	(-0.779)
Hostile Takeover	β_5	15.186***	17.290***	6.883*	9.117**
		(3.276)	(3.388)	(1.681)	(2.086)
Earnings	β_6	13.134***	12.032***	15.103***	13.965***
		(4.058)	(3.166)	(4.642)	(3.702)
Returns	β_7	94.972***	72.051***	93.710***	71.039***
		(20.836)	(13.101)	(20.430)	(12.888)
Size	β_8	7.008***	6.094***	6.880***	5.972***
		(32.935)	(26.067)	(32.164)	(25.505)
btm	β_9	0.239	-0.346	-0.018	-0.569
		(0.727)	(-0.988)	(-0.053)	(-1.615)
Volatility Ret	β_{10}	-17.367***	-24.516***	-18.812***	-25.771***
		(-5.033)	(-6.330)	(-5.431)	(-6.641)
Volatility Earn	β_{11}	-23.349***	-28.244***	-29.628***	-33.793***
		(-4.406)	(-4.834)	(-5.708)	(-5.842)
Firm Age	β_{12}	-3.484***	-3.952***	-3.587***	-4.068***
		(-4.468)	(-4.623)	(-4.573)	(-4.730)
Busseg	β_{13}	-0.721	-0.441	-0.704	-0.450
		(-1.003)	(-0.521)	(-0.980)	(-0.531)
Geoseg	β_{14}	-0.603	-0.021	-0.470	0.070
		(-0.824)	(-0.024)	(-0.645)	(0.080)
Loss	β_{15}	-3.413***	-3.048***	-3.727***	-3.298***
		(-6.279)	(-4.754)	(-6.833)	(-5.170)
change Earn	β_{16}	-14.284***	-9.511***	-15.315***	-10.433***
		(-5.699)	(-3.204)	(-6.211)	(-3.564)
afe	β_{17}	-13.270***	-2.351	-11.581***	-0.903
		(-3.328)	(-0.348)	(-2.855)	(-0.133)
af	β_{18}	-9.732***	-6.883**	-10.220***	-7.331**
		(-3.971)	(-2.334)	(-4.073)	(-2.464)
Significance $\beta_1 + \beta_5$		0.612	0.383	-	-
Significance $\beta_3 + \beta_5$		-	-	0.729	0.726
Industry FE		YES	YES	YES	YES
Year FE		YES	YES	YES	YES
Observations		10,231	9,090	10,231	9,090
Adj. R-sqr.		0.621	0.526	0.620	0.525

The sample comprises 10,231 firm-year observations for the period 1994-2013. Models are estimated using industry (SIC-2) and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All variables are defined in Appendix 10. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance levels at the 1%, 5%, and 10 % levels, respectively.

Table 8 Hostile takeover and firm performance

	(1) Returns	(2) $Returns_{t+1}$	(3) Returns	(4) $Returns_{t+1}$
Hostile Takeover	-0.014***	-0.010*	-0.011***	-0.008**
	(-3.144)	(-1.934)	(-3.042)	(-2.033)
Negative Tone	-0.001	-0.000		
	(-0.555)	(-0.320)		
Negative Tone*Hostile Takeover	0.004	0.004		
	(0.768)	(0.663)		
Pessimism			-0.003**	0.002
			(-2.372)	(1.317)
Pessimism*Hostile Takeover			0.010	-0.008
			(1.523)	(-1.083)
Earnings	0.013**	-0.001	0.014**	-0.001
	(1.986)	(-0.106)	(2.112)	(-0.177)
Size	0.003***	0.000	0.003***	0.000
	(11.057)	(0.162)	(11.116)	(0.229)
btm	-0.006***	-0.004***	-0.006***	-0.004***
	(-6.735)	(-5.784)	(-6.878)	(-5.793)
Volatility Ret	0.145***	0.043***	0.145***	0.043***
	(17.488)	(5.185)	(17.592)	(5.218)
Volatility Earn	-0.010	-0.010	-0.010	-0.010
	(-1.258)	(-1.129)	(-1.333)	(-1.126)
Firm Age	0.001	-0.001	0.001	-0.001
	(1.551)	(-0.854)	(1.630)	(-0.807)
Busseg	0.001	0.001	0.001	0.001
	(0.701)	(1.367)	(0.668)	(1.409)
Geoseg	-0.001	-0.002**	-0.001	-0.002**
	(-1.260)	(-2.381)	(-1.182)	(-2.421)
Loss	-0.009***	0.001	-0.008***	0.001
	(-6.427)	(0.503)	(-6.359)	(0.510)
Earn change	0.070***	0.017**	0.070***	0.017**
	(9.415)	(2.309)	(9.570)	(2.335)
afe	0.035*	-0.082***	0.035*	-0.082***
	(1.708)	(-4.764)	(1.740)	(-4.784)
af	-0.103***	0.038***	-0.103***	0.039***
	(-5.993)	(3.582)	(-6.073)	(3.643)
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	10,231	9,156	10,231	9,156
Adj. R-sqr.	0.376	0.215	0.376	0.215

The sample comprises 10,231 firm-year observations for the period 1994-2013. Models are estimated using industry (SIC-2) and year fixed effects. Standard errors are clustered by firm and t-statistics are in parenthesis. All variables are defined in Appendix 10. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance levels at the 1%, 5%, and 10 % levels, respectively.

Table 9 Hostile takeover and earnings management

	(1) Accrual EM	(2) Accrual EM_{t+1}	(3) Accrual EM	(4) Accrual EM_{t+1}
Hostile Takeover	-0.078***	-0.115***	-0.086***	-0.103***
	(-2.918)	(-3.969)	(-3.664)	(-3.339)
Negative Tone	-0.001	-0.007*		
	(-0.128)	(-1.735)		
Negative Tone*Hostile Takeover	-0.014	0.025		
	(-0.801)	(1.409)		
Pessimism			0.001	-0.003
			(0.323)	(-0.668)
Pessimism*Hostile Takeover			-0.024	0.004
			(-1.455)	(0.177)
Earnings	-0.085***	-0.020	-0.084***	-0.017
	(-6.320)	(-1.625)	(-6.061)	(-1.438)
Returns	-0.007	0.114***	-0.008	0.113***
	(-0.221)	(3.053)	(-0.265)	(3.073)
Size	0.007***	-0.002	0.007***	-0.002
	(4.400)	(-0.835)	(4.426)	(-0.903)
btm	-0.007***	-0.004***	-0.008***	-0.004***
	(-6.114)	(-4.292)	(-7.202)	(-4.820)
Volatility Ret	0.071***	0.037***	0.070***	0.036***
	(5.575)	(3.006)	(5.600)	(2.955)
Volatility Earn	-0.041***	-0.091***	-0.047***	-0.097***
	(-3.057)	(-6.288)	(-3.039)	(-7.585)
Firm Age	-0.044***	-0.047***	-0.044***	-0.049***
	(-11.079)	(-8.152)	(-10.952)	(-9.104)
Busseg	0.002	0.005*	0.002	0.005*
	(1.027)	(1.757)	(1.047)	(1.763)
Geoseg	-0.000	-0.002	-0.000	-0.002
	(-0.189)	(-0.899)	(-0.144)	(-0.882)
Loss	0.001	-0.004	0.001	-0.004*
	(0.649)	(-1.670)	(0.566)	(-1.699)
Earn change	0.012	-0.001	0.011	-0.003
	(0.526)	(-0.138)	(0.534)	(-0.309)
afe	0.005	-0.039*	0.006	-0.037*
	(0.228)	(-1.774)	(0.276)	(-1.715)
af	0.026*	0.001	0.026**	0.001
	(2.019)	(0.031)	(2.048)	(0.021)
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	10,057	8,912	10,057	8,912
Adj. R-sqr.	0.236	0.243	0.236	0.243

The sample comprises 10,057 firm-year observations for the period 1994-2013. Models are estimated using industry (SIC-2) and year fixed effects. The dependent variable is *Accrual EM* which is calculated following Jones (1991). Standard errors are clustered by firm and t-statistics are in parenthesis. All variables are defined in Appendix 10. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance levels at the 1%, 5%, and 10 % levels, respectively.

Table 10 Constituency statutes and disclosure tone

	(1) Negative Tone	(2) Negative Tone	(3) Pessimism	(4) Pessimism
Constituency Statutes	-0.092***	-0.093***	-0.103***	-0.104***
	(-4.124)	(-4.194)	(-5.867)	(-5.837)
E-index	0.020*		0.018	
	(1.858)		(1.613)	
G-index		0.007***		0.005**
		(2.811)		(2.320)
Earnings	-0.641***	-0.640***	0.123*	0.123*
	(-7.605)	(-7.597)	(1.693)	(1.697)
Returns	0.619***	0.629***	0.184	0.194
	(4.585)	(4.879)	(1.128)	(1.237)
Size	-0.102***	-0.103***	-0.139***	-0.139***
	(-6.298)	(-6.547)	(-8.350)	(-8.614)
btm	0.004	0.004	-0.070***	-0.070***
	(0.561)	(0.578)	(-3.934)	(-3.943)
Volatility Ret	-0.050	-0.058	-0.390***	-0.397***
	(-0.592)	(-0.686)	(-4.602)	(-4.676)
Volatility Earn	1.020***	1.022***	-1.046***	-1.044***
	(4.608)	(4.512)	(-4.995)	(-4.886)
Firm Age	0.100***	0.098***	-0.038	-0.040
	(3.326)	(3.231)	(-1.430)	(-1.493)
Busseg	-0.028	-0.027	-0.020	-0.018
	(-1.602)	(-1.474)	(-1.077)	(-0.971)
Geoseg	0.019	0.019	0.058**	0.057**
	(0.677)	(0.660)	(2.134)	(2.099)
Loss	0.066***	0.066***	-0.015	-0.015
	(6.348)	(6.409)	(-1.404)	(-1.456)
Earn change	0.927***	0.929***	0.682***	0.684***
	(11.385)	(11.448)	(9.203)	(9.284)
afe	-0.512***	-0.505***	-0.011	-0.004
	(-4.637)	(-4.869)	(-0.084)	(-0.032)
af	-0.182***	-0.179***	-0.316***	-0.312***
	(-3.994)	(-3.982)	(-5.713)	(-5.803)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	8,870	8,870	8,870	8,870
Adj. R-sqr.	0.694	0.693	0.586	0.585

The sample comprises 8,870 firm-year observations for the period 1994-2013. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All variables are defined in Appendix 10. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance levels at the 1%, 5%, and 10 % levels, respectively.

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